

AMERICAN ARTISAN and Hardware Record

Vol. 79. No. 9.

620 SOUTH MICHIGAN AVENUE, CHICAGO, FEBRUARY 28, 1920.

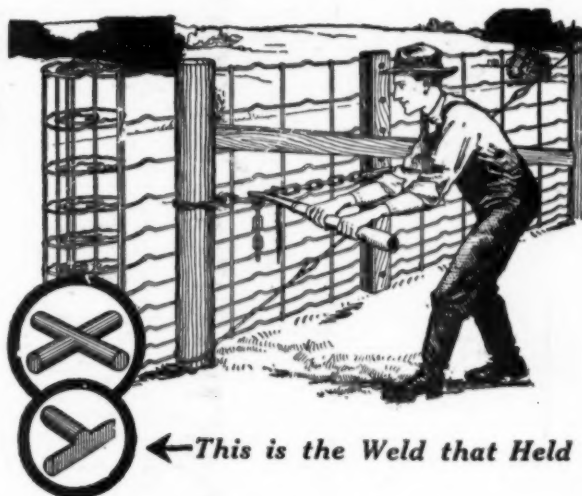
\$2.00 Per Year.

**Get the Wire Fencing sales
in your territory this spring**

NEW wire fences will be needed by many people in your district this spring and you should get the profits to be had by making these sales.

People who buy wire fencing these days buy the best. They want their fences to last long and hold their true shape. They want wire fencing that is galvanized at every point.

You can sell these prospective customers *exactly what they want*, at a fair price and with *a good profit for yourself* if you sell them—



“Pittsburgh Perfect”

ELECTRICALLY WELDED

WIRE FENCING

FOR FARM, RANCH, POULTRY, GARDEN AND LAWN PURPOSES

Our many years of experience enables us to make “Pittsburgh Perfect” FENCING in particular, designs, sizes of mesh and heights suited exactly to all special fencing requirements. “Pittsburgh Perfect” FENCING is made of **Open Hearth Wire**. It is tough, strong and of exactly the proper temper to produce the most effective results. Note, from the insert illustrations above, the “Pittsburgh Perfect” weld. Every contact point is electrically welded in this manner, making the fence practically one piece. “Pittsburgh Perfect” FENCING strings easily on any kind of posts. We use only the best quality of zinc in galvanizing our wire and our process is the most highly improved method known. There are many more features which we would be pleased to tell you about.

Become our representative in your district.

Our advertising service will help you make sales.

Our extensive national advertising creates a favorable impression of and a demand for “Pittsburgh Perfect” WIRE FENCING. We help our dealers get practical benefit from this national advertising by furnishing them with **practical** selling helps. Complete electrotyped advertisements, electrotypes of illustrations, designs and trademarks are given to our representatives to use in their local advertising. Many of the readers of our national advertising are located in your district and perhaps many of them are friends or customers of yours. When they see you advertising “Pittsburgh Perfect” WIRE FENCING they know just where to go to get it.

Write today and tell us that you want to know all about our dealers' proposition.

Let us send you our complete illustrated catalogs—Write today.



PITTSBURGH STEEL CO.

General Offices: PITTSBURGH, PA.

New York San Francisco Chicago Memphis Dallas
Warehouse at Houston, Texas. Export Department: Equitable Bldg., New York, U. S. A.





It Pays to Sell a Good Range

ROESCH'S La-Roes-Ko represents the best that can be produced in the Art of Stove Making. Superior in QUALITY and WORKMANSHIP. STRONG, DURABLE, SANITARY and BEAUTIFUL. All enameled range—enameled inside and outside—non-corrosive.

The agency for ROESCH'S up-to-the-minute line of Enameled Stoves and Ranges is worthy of your consideration.

Catalogue and Discount
on request

WE MAKE ENAMEL STOVES AND RANGES ONLY

ROESCH ENAMEL RANGE CO.

BELLEVILLE, ILLINOIS

Clark Jewel Oil Stoves have many strong selling points—your customers at once realize the high quality of these splendid stoves when they see them on your sales floor.

Beautiful Olive Green Enamel finish. High speed, low consumption burners, short and close to the top.

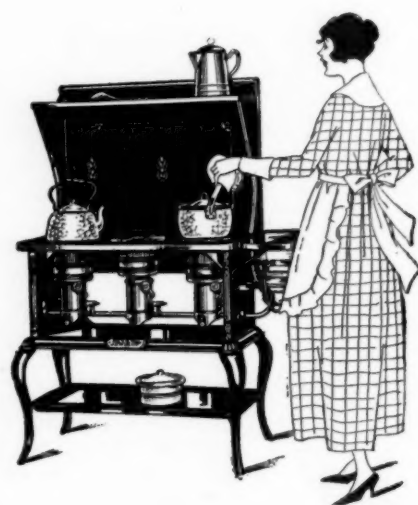
Large cooking surface.

Strong high shelves.

Smooth cast iron legs.

Handsome heavy glass tank.

When you sell a Clark Jewel Oil Stove you are assured of a satisfied customer.



GEORGE M. CLARK & COMPANY

Division American Stove Company

CHICAGO

ESTABLISHED 1880

Representative of
The Hardware, Stove,
Sheet Metal, and Warm
Air Heating and Venti-
lating Interests
PUBLISHED EVERY SATURDAY

AMERICAN ARTISAN and Hardware Record

Address all communications and
remittances to

DANIEL STERN
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IDEAS NEED TO be advertised as well as commodities. To mention a particular make of wrench to the public once and never again to refer to it in print, may result in a few sales, but not in a continuous series of purchases. It is the same with ideas. To bring about their general adoption, it is needful frequently to repeat them for the attention of those whom they are intended to benefit. Probably no idea with reference to retailing hardware is more important or more in need of emphatic and incessant repetition than the thought that the dealer has nothing to fear from new forms of competition now coming into effect.

Therefore, there is good to be derived from calling attention to and repeating the encouraging idea set forth by Mathias Ludlow, Vice-president National Retail Hardware Association, in his address on "The New Order," delivered at the recent convention of the Illinois Retail Hardware Association and reported in full in the February 21, 1920, issue of AMERICAN ARTISAN AND HARDWARE RECORD. Our readers should meditate upon and adopt the spirit of the following paragraphs from that address:

"In the struggle to maintain standards of living against high prices we are bound to have greater competition. We must prepare for growing competition as a mere matter of business in spite of any great movement on the part of individuals or groups. The best method of preparation is to be better competitors than ever before. The chain store idea presents a two-sided question and because of the peculiarities of our business, the diversity of the commodities we handle and the experience we have in dealing with the same people in the same place year in and year out, we have the best end of the deal.

"The mail order and chain store institutions have more to fear from us than we have to fear from them. They thrive only on the inefficiency and indifference of the regular dealer who is letting his opportunity slip over to them, in many cases wasting his time in grumbling against the changing times instead of getting busy and adjusting himself to the changes."

How to keep abreast of the times and to learn what adjustments to make in line with changing conditions is best accomplished through careful study of the trade journal. AMERICAN ARTISAN AND HARDWARE RECORD places before its readers examples of successful merchandizing every week, practical instruction in window display, suggestions for improvements in service, management, publicity, accounting, store arrangement, lessons in resultful salesmanship, and scores of other

helps. The merchant who adopts the suggestions, applies the lessons, and puts into effect the improvements—to the degree of his requirements—need lose no sleep in worrying about any kind of competition.

IT MAY BE a matter of surprise to some mechanics to learn that there is more than one definition of profit in the dictionary. Money is not the only form in which profit may be acquired. **Defines Profit.** Indeed, from some points of view money is a secondary rather than a primary motive in the obtainment of profit. This assertion may be made without falling into the error of mere idealism. The dictionary defines profit as "acquisition beyond expenditure; pecuniary gain in any transaction or occupation; valuable result; useful consequence; benefit; to be of service to; to be good to; to help one; to benefit; to aid; to make improvement." Profit is made in the form of good will as well as dollars. To concentrate upon money as the aim of business is to lose profit. If you converge rays of sunlight through a convex lens upon a plant, you will ruin and burn it. The heat must be diffused naturally to help the growth of the plant. So, too, with your business. Let service, satisfaction, friendliness, and sound merchandise be your motives and the profits will come naturally and in sufficient abundance to reward your efforts.

IT IS A SOMEWHAT serious undertaking to advise retailers in the matter of buying goods in amounts beyond the bare necessity of current requirements. Experts differ as to the best course to follow. Some counsel extreme caution in making purchases, arguing that a break in prices is likely to come at any time. Others say that it is unwise to allow one's stocks to get so low that it will be difficult to replenish them. All admit, however, that there is a shortage of supplies in practically all lines and that the chief problem is not in regard to prices but with respect to goods with which to meet the demand of customers.

No one is absolutely sure of the future. But that is no reason why we should cease to make plans for tomorrow. In one sense of the word, everything in life is a gamble. We do not know what is going to happen an hour from now. Yet we do not, on that account, retire to an arm chair and wait to see what is coming to us. In mathematics there is what is known as "the law of probabilities." Without being aware of the terms in which it is phrased, we are constantly

making use of it in our daily actions. Having no certainty as to what may happen, we nevertheless make fairly good guesses or estimate to guide us in formulating plans for the future.

One fact which is generally overlooked in the discussion of the probable trend of business is that the raw materials for this and the next season's production have been bought or contracted for at a fixed price or on terms which do not admit of reduction in basic costs. It is, therefore, a foregone conclusion that prices for this and next season's goods will not decline below the costs of raw material, manufacture, and distribution. Consequently, the retail merchant is comparatively safe in relying on "the law of probabilities" in placing his orders for ample quantities of standard commodities far enough in advance of actual requirements to be reasonably certain of deliveries in time to fill demand.

ON THE SHELVES of a modern drug store may be found more different kinds of "patent medicine" than there are remedies officially recognized

Hard Work Is Remedy. in medical text books. For economic diseases there are almost as many "cures" as for bodily ills. Just now the world is suffering from a complication of high prices and lowered production. Numerous remedies are offered to overcome the condition. Most of them fail to do any good. There is one, however, which is proposed by William A. Law, former President of the American Bankers' Association, as well as by other shrewd and successful leaders of industry. Briefly described, this remedy is hard and persistent work. Good, old-fashioned work and plenty of it would do more than anything else to increase our national wealth and put us in the front rank of producing nations at the very time when 100 per cent efficiency would yield richer rewards than ever before in the world's history. No man ever became a captain of industry working only eight hours a day and looking constantly at the clock.

Some economists see more lower commodity prices by next autumn, but empty shelves in this country and restoration of the war-wrecked industries abroad, present an argument to the contrary. A veritable famine exists in some branches of merchandise, and many manufacturers can testify to the increased difficulty of obtaining an adequate supply of raw materials. The situation calls for intelligent handling, however, as conditions differ in different industries. In several instances, to my knowledge, manufacturers have had to purchase plants, factories, and install enormously expensive equipment so as to insure themselves a sufficient supply of raw material and semi-finished products which they could not be sure of obtaining from the usual channels within six months, one year, or at all.

There is no more to be divided up among the people of the earth than the people of the earth produce. If we want more we must produce more, and if we produce less we must be satisfied with less. That is the natural law of the world and it can not be opposed over any extended period of time nor can it be evaded by the introduction of any artificial substitutes. If the

world would eat the world must produce, and if the world would produce the world must work.

THE SACREDNESS OF a contract freely entered into is basic in the laws and constitution of our country. Interference with the carrying out of the stipulations of a legitimate contract is an act of lawlessness. It is well, therefore, that employers of labor should know their rights in this matter, particularly in those aspects of the subject which bear upon the question of the open shop. The United States Supreme Court has decided, in the case of the Hitchman Coal and Coke Company, Wheeling, West Virginia, against officers of the United Mine Workers of America, that "the employer is as free to make nonmembership in a union a condition of employment, as the working man is free to join the union, and that this is a part of the constitutional rights of personal liberty and private property, not to be taken away even by legislation, unless through some proper exercise of the paramount police power."

A GOOD MANY dealers wisely make use of all the advertising helps furnished by the manufacturers. But it is unpleasant to note the large number who do not. It is a waste of valuable material for such aids as circulars, posters, cards, and other advertising copy to lay around unused. The loss is not to the manufacturer. The dealer who neglects to expand his trade by means of such helps is lacking in business ability. By using the circulars, cards, and posters supplied, the merchant is employing competent brains to interest prospects in the products he handles.

In a canvass of retail dealers on the question of what use they put the advertising aids furnished by manufacturers to, it was surprising to note that those who did employ them were enthusiastic over the results obtained. They declared that these helps were a profitable source of publicity, as the matter was of such form that it carried its message with more forcefulness than would be the case were they to rely upon their own ability. Several means are used by dealers to procure the most from the copy sent out to prospects. The most popular in existence for utilizing circulars is the follow-up method. In order effectively to employ the follow-up system, the dealer must keep a card file of his prospective buyers or those whom he thinks might possibly be interested in an article on which is furnished advertising helps. However, whatever the method used, it was found that by judicious employment of the advertising aids, the results were always encouraging. It should be borne in mind that effort is required in connection with the proper use of circulars and similar aids furnished by manufacturers. The merchant must study his field carefully. He must not merely seek to rid himself of the printed matter on hand. That would be foolhardiness.

Above all, it must be remembered that it is money lost when manufacturers' advertising helps are left dust-laden in some obscure corner, either through utter neglect, or with the thought that the rush of business forbids the time necessary to send them out. The dealer who realizes the value of co-operation and

the necessity for continuous advertising does not overlook the importance to himself of making the manufacturers' helps carry his message in a way which closely relates the merchant's service with the reliability of the product described in the advertising matter.

RANDOM NOTES AND SKETCHES.

By Sidney Arnold.

Countless pages have been written on the secret of success. Much experience and wisdom have been brought to bear upon the subject. Condensed into a single sentence, all the literature on the theme may be expressed in the words of Matthew Arnold: "The grand secret of success is that successful men take one hundred times the trouble that men usually do."

* * *

Many of us unconsciously acquire the habit of exaggerating our difficulties in advance of any effort to overcome them, says my friend M. E. Ledlie, Sales Manager, Detroit Vapor Stove Company, Detroit, Michigan. He illustrates the statement with a simple story, thus:

Vivien, aged 4, ran screaming to her mamma. At her heels was a playful pup.

"Why, Vivien, what are you crying about?" mamma asked.

"The dog is after me, mamma, the dog is after me!"

"Why, the dog wasn't trying to get you, it was only running a race with you."

Then Vivien's face brightened, her tears quickly disappeared:

"I beat him, too, didn't I, mamma!"

* * *

Sometimes the customer and the salesman do not have the same meaning in mind as regards a selling argument, declares my friend O. D. Ellis, Sales Manager of Iver Johnson's Arms and Cycle Works, Fitchburg, Massachusetts. He cites this example:

"Mercy! How that bird swears!" exclaimed the would-be purchaser. "What would my husband say?"

"I dunno, ma'am," replied the dealer. "But whatever it was this 'ere parrot could repeat it right over after him."

* * *

It is not always wise to delay the reception of a message from guest or customer, affirms my friend John R. McKnight, Secretary, Keystone Association of Eastern Pennsylvania Stove Manufacturers, Philadelphia, Pennsylvania.

He tells of a certain lady in Paris who gives periodical dinners at which assemble most of the best-known wits and litterateurs of the day. The rule of the mansion is that while one person discourses no interruption whatever can be permitted. It is said that Anatole France once attended one of these dinners, and being in excellent vein, talked without a break during the whole repast.

Toward the end of the dinner a guest was heard to begin a sentence, but he was instantly silenced by the hostess.

After they had left the table, however, she at once informed the extinguished individual that, as M.

France had now finished his conversation, she would gladly hear what he had to say. The guest modestly declined; the hostess insisted.

"I am certain it was something of consequence," she said.

"Alas! madam," he answered, "it was, indeed; but now it is too late. I should have liked a little more of that iced pudding."

* * *

All sorts of problems arise in hardware, even problems of grammar, says my friend James B. Carson, of Dayton, Ohio, Secretary Ohio Hardware Association. He relates the story of a Cambridge professor who went into a hardware store and said:

"Show me a shears, please."

"You mean a pair of shears, don't you?" said the dealer.

"No," said the professor, "I mean what I say. I mean a shears."

The dealer took down a box of shears.

"Look here, professor," he said. "Aren't there two blades here? And don't two make a pair?"

"Well, you've got two legs. Does that make you a pair of men?" And the professor smiled at the dealer triumphantly through his spectacles.

He was logically right; but, really, he was wrong.

* * *

My friend F. A. Heitmann, hardware jobber of Houston, Texas, tells about a bicycle dealer in a small town.

A lady was one day commenting on the number of wheels to be seen in the streets and observed:

"You must be making your fortune if only half of the machines ridden by the townspeople come from you."

"Well, mum, I don't know so much about that," was the reply; "you see, I have to sell a good many of my machines on the 'Kathleen Mavourneen' principle."

"The 'Kathleen Mavourneen' principle!" said the lady. "I never heard of it. What is it?"

"Why, payment on the hire system. Don't you know the song, mum? 'It may be for years and it may be forever.' Good morning, mum."

* * *

There are wide divergencies of belief as to the ultimate plan of the universe. Indeed, persons are not lacking in every community who declare that they see no finality whatever in the universe. Theories multiply on every hand in regard to the motive and purpose of life. But most of us may find common ground for agreement in such encouraging verses as the following of O. Henry:

To Children the Heart of a Child.

Hard ye may be in the tumult,
Red to your battle hilts,
Blow give for blow in the foray,
Cunningly ride in the tilts;
But when the roaring is ended,
Tenderly, unbeguiled,
Turn to a woman a woman's
Heart, and a child's to a child.

Test of the man, if his worth be
In accord with the ultimate plan,
That he be not, to his marring,
Always and utterly man;
That he bring out of the tumult,
Fitter and undefiled,
To woman the heart of a woman,
To children the heart of a child.

AMERICAN ARTISAN

HARRY BERNARD McGRATH.

A baseball player never grows old. Indeed, there are some enthusiastic followers of the game who solemnly aver that one would search in vain through the files of a daily newspaper for the obituary of a baseball player. While it is doubtful that actual immortality is achieved by any baseball player, the fact remains that baseball players live as long as they want to live and when they depart this earth they do so by their own volition and by sort of legerdemain of quiet disappearance. Harry Bernard McGrath, of H. B. McGrath and Company, Cleveland, Ohio, was catcher in a baseball team in his boyhood days. He is still a baseball man. Therefore, he is so much younger in actual state of mind and body than in the chronology of his years that he has quit telling people the date of his birth. They won't believe him when he does. He is so youthful in fact and in appearance that they think he is exaggerating his age in order to gain the advantage of the impression of maturity.

Harry B. McGrath was born in Cleveland, Ohio. He attended the Cleveland grammar and high schools. In 1886, he entered the employ of the wholesale hardware house of W. Bingham and Company, Cleveland, Ohio. He learned the business from bottom to top, beginning as errand boy and finishing as traveling salesman. After ten years in the service of W. Bingham and Company, he engaged in business for himself under the firm name of H. B. McGrath and Company, at 13,857 Euclid Avenue, Cleveland, Ohio. The business included hardware, stoves, warm air heaters, sheet metal work, and plumbing. Early in his career, as a retail merchant, he perceived the value and necessity of organization among retailers. In August, 1911, he helped organize the Cleveland Retail Hardware Association, was elected its first president and subsequently re-elected for several terms. In the same year, he was chosen as president of the Ohio State Hardware Association for the term of 1911-1912. He took an interest in every department of his business and, therefore, became active in association work among sheet metal contractors. He was elected vice-president of the Sheet Metal Contractors' Association of

Cleveland, Ohio, in 1908, advanced to the position of president of the Association in 1910, and was re-elected president in 1911 to 1913.

Harry B. McGrath is prominent in all movements for the development of his native city. He is a member of the Cleveland Athletic Club, the Cleveland Builders' Exchange, East Cleveland Chamber of Commerce, and other civic bodies. From experience he knows the benefits of intelligent cooperation, and, therefore, favors fraternal as well as commercial organization. On the fraternal side, he holds membership in the Royal League. His energy is as remarkable as his geniality and goodfellowship. He gives an unmistakable impression of sincerity in all that he

does. He believes in his work.

He has confidence in the associations in which he holds membership. He insists that the successful hardware merchant is the one who takes the most active part in forwarding the interests of his community and of his trade through organized cooperation. He believes in studying the literature of one's business and he holds that the trade journal is the best text book for the dealer who wants to keep abreast of the times. He rightly declares that no one man can conduct a hardware store and at the same time gather, classify, and analyze the great mass of suggestions and experiences out of which are condensed the lessons of modern merchandizing. Hence, his ad-

vice to his fellow retailers is, study your trade journal.

Harry B. McGrath urges membership in trade organizations and community societies not only for the benefit which is sure to come from such membership to the individual's business but also for the reason that such membership is a powerful influence in the broadening of character and the enlargement of knowledge. Indeed, he believes it a matter of duty, of basic Americanism, to take part in movements organized for community betterment—and that necessarily implies participation in the work of trade associations as well. It is noteworthy that this lesson of neighborly helpfulness is persistently taught by everyone connected with the Ohio Hardware Association and with special earnestness by the subject of this sketch.



HALL OF FAME

ALBERT ZETTLER.

Spectacular deeds are common in our day. With scarcely any perceptible quickening of our pulses, we read about aviators "looping the loop" or leaping from one airship to another in the clouds. During the war the columns of our daily papers teemed with stories of marvelous daring and extraordinary heroism. The foreground of our consciousness has, therefore, become so crowded with high tension sensations that there is scant room left for the quiet and unostentatious achievements of commerce and art. As a consequence, it becomes necessary to place a heavier emphasis upon what in other times would need no sharpening of its edge to etch an impression upon our attention. Thus, in the matter of merchandizing, there is comparatively small power of attraction as against the more powerful pull of big events and startling performances.

Yet, it is profitable from many angles to set forth the lesson of the lives of successful merchants—profitable not only for those engaged in like pursuits, but profitable also to everyone who is endeavoring to lift himself out of traditional grooves and go forward upon the broader way of purposeful endeavor. That is why there is good warrant for making a summary of the work and progress of Albert Zettler, just elected president of the Ohio Hardware Association. The very fact of his having been chosen as Chief Executive of that organization is in itself highly significant, and justifies the inference that he possesses qualities of business talent and personality above the common average.

Albert Zettler was born in Columbus, Ohio, April 21, 1868. He received his elementary education in the public school of his native city and subsequently entered the Ohio State University. In 1886, when eighteen years of age, he was reluctantly obliged to leave college in order to give his attention to his father's business which was then expanding at such a rate that his help in its management became imperative. The following year his father absorbed the stock of Brown, Brown and Company, retail hardware business, which was valued at between two thousand and three thousand dollars and enlarged it to a forty thousand dollar stock. Since that time, the trade has

grown to such an extent that the Zettler Hardware Company did a business of one hundred and twenty-five thousand dollars in 1919. It was incorporated in 1918 as the Zettler Hardware Company, and Albert Zettler became its president—an office which he continues to fill with complete satisfaction to his associates.

Albert Zettler has made a notable success for the reason that he studies the principles of salesmanship and is always on the alert for better methods of merchandizing. Although the underlying principles of psychology upon which salesmanship is based remain the same, their application undergoes constant change in order to correspond with the developments of social

and economic conditions. Electricity, power farming, the automobile, and the telephone, and many other mechanical devices now in common use have profoundly altered the habits and customs of the people. The merchandizing methods of a generation ago, therefore, are no longer valid. New methods are demanded for new times. Albert Zettler has kept pace with the progress of the people. He likes the broad spaces, and the open country is his hobby. He is a good fisherman, which implies that he possesses the virtues of patience and serenity.

It is not always the noisiest motor which develops the greatest amount of power. Indeed, it is frequently the most wasteful of energy

through excessive friction. This is probably the lesson which Albert Zettler has learned best, namely, the avoidance of needless friction. He says that it would be impossible to calculate the amount of good which has been lost to the world through misdirected effort, through friction instead of cooperation, through worry in place of self-control. The organizing and strengthening of a community is accomplished chiefly through the elimination of friction, the doing away with petty differences and the coordinating of enthusiasm and neighborly good will in what might seem a contradiction, namely, an actively tranquil fellowship. Thus bickerings and mistrust are replaced by confidence and a broad tolerance which are positive and constructive.



UP TO THE MINUTE NEWS SIFTINGS

MODEL ENGINE MADE UP OF STOVE PARTS ATTRACTS ATTENTION AT IOWA CONVENTION.

Illustrative of the highly attractive exhibits which were arranged at the Convention of Iowa Retail Hardware Association, held February 10, 11, 12 and 13, 1920, in the Auditorium Building, Des Moines, Iowa, is that arranged by the Des Moines Stove Repair Company, depicted herewith. The model engine made up of stove parts is deceptive in many ways. Close study is necessary in order to determine the exact nature of the articles which comprise the engine shown in the illustration. This exhibit arrested a great deal of attention. Those who saw it expressed their approval of its unusual formation. Thereby, the Des Moines Stove Repair Company gained the first requisite to a good display, and that is, the drawing of attention. The exhibitor did not use any artificial devices to gain the end in view. Selecting such goods from its stock which would best aid in securing the desired effect, the Des Moines Stove Repair Company does not employ a single extraneous article. The pany does not employ a single extraneous article.

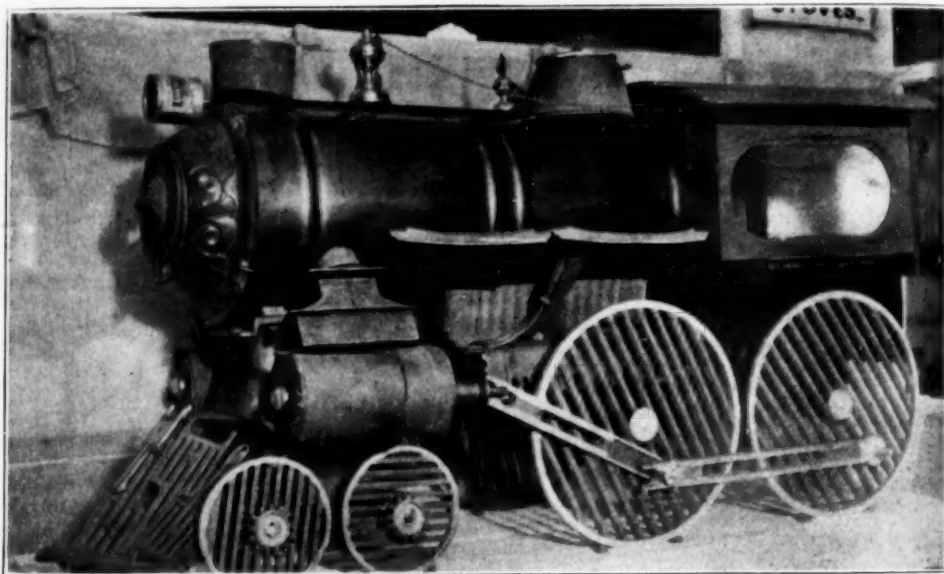
The following stove and warm air heater repairs and supplies formed the main parts of the locomotive:

- Boiler: Two steel heater drums;
- Cab: Panel plates and todd linings;
- Wheels: Salamander grates;
- Connecting rods: Furnace draw bars;
- Cylinders: Hard coal stove magazines;
- Steam chests: Reservoir pockets;
- Fire box: Fire box of stove.

In addition to the foregoing parts were: water fronts, fire pots, grates for heaters and ranges, stove urns, dampers, shakers, etc., totaling forty-seven different pieces. The results were better than expected. The natural appearance of the engine was the most attractive feature of the exhibit. Incidentally, the individual parts comprising this exhibit commanded attention. At the South Dakota Retail Hardware Association Convention, held at Sioux Falls, South Dakota, February 24, 25, 26, and 27, 1920, a similar exhibit was displayed. It was the incentive given the exhibitors by the attention attracted that prompted

them to repeat the arrangement at the convention of the South Dakota Retail Hardware Association.

One of the main features in all conventions now-a-days is the exhibit of manufacturers and jobbers. As a result of the many excellent displays shown, great skill is required in order to gain attention. Each



Stove Parts Display, Arranged by the Des Moines Stove Repair Company, Des Moines, Iowa.

succeeding arrangement seems to surpass the preceding ones. Much work is necessary in order to keep up with the average ability evident at the conventions. A great deal of planning was necessary on the part of the Des Moines Stove Repair Company before the arrangement of the exhibit shown herewith. However, the work expended in preparing this model engine was repaid by the attention given it by those who were at the convention.

LOCATION ADMITS OF PROMPT SERVICE.

The National Stove Repair Company, Cincinnati, Ohio, successors to the stove and range repair department of The J. B. Morris Foundry Company, will conduct its main distributing point and warehouse at 325 Sycamore Street, Cincinnati, Ohio. Prompt deliveries on all repairs ordered from it is the policy of this company. The efficient means of transportation at hand in its new location will make it still easier to maintain that very desirable policy.

MAKES GOOD LINE OF STOVE BOLTS.

A dependable line of stove bolts, stove rods and stove rivets is made by the Kirk-Latty Manufacturing Company, Cleveland, Ohio. It is the aim of this company satisfactorily to serve its customers. The producing facilities of the Kirk-Latty Manufacturing Company are unusually large. Bolts, nuts and rivets

are manufactured in large quantities. However, the big amount of the goods produced does not detract from the precision with which they are manufactured, declares this company. The latest type of machinery is employed in every operation. Prompt service is guaranteed in deliveries. A catalogue of interest to the stove trade is published by the Kirk-Latty Manufacturing Company. It illustrates and describes this company's products. Dealers should write to the Kirk-Latty Manufacturing Company, Cleveland, Ohio, for a copy of this catalogue, or for any other information they desire concerning the products manufactured by this company.

PATENTS ORNAMENTAL DESIGNS FOR COAL AND GAS RANGE.

That ornament may be combined with utility to produce a pleasing effect is a fact not always born in mind in the production of commodities. Of late years, however, a distinct tendency toward the artistic has been developed in many fields of production. There is no reason why a thing of daily use should be unshapely or ugly. Makers of stoves have been among the pioneers in rendering their prod-

ucts ornamental as well as useful. Interest, therefore, attaches to two ornamental designs for combination coal and gas ranges shown in the accompanying illustrations. United States patent rights for a term of fourteen years have been granted for these ornamental designs to John J. Toomey, Chicago, Illinois, assignor to Rathbone, Sard and Company, Albany, New York, a corporation of New York. The



first design, number 54,479, is similar to the second, number 54,480. It will be seen from the illustrations that these designs are not too complicated in their ornamentation. The lines are graceful and the whole effect is one of well-balanced proportions. The principal difficulty encountered in planning such ornamental designs is so to devise the details that they do not work out in practice in such a way as to leave projections and hollows for the gathering of dust and grease. It is a commendable feature of the ornamental designs under discussion that care has been taken to avoid the use of what was known a generation ago as "filigree work" which, while pleasing enough to the eye, was too conventional and needlessly expensive.

IS ECONOMICAL IN CONSTRUCTION.

Being built for neatness and economical service, the Clark Jewel Oil Stove, shown in the accompanying illustration, manufactured by the George M. Clark and Company,



Clark Jewel Oil Stove, Made by the George M. Clark and Company, Division American Stove Company, Chicago, Illinois.

and indicates at all times the size of the flame. By means of this device, dishes that require even fires can be prepared without any danger of spoiling them by hit or miss methods. The burners have great simplicity.

The supply pipes on all Clark Jewel Oil Stoves are coated inside and out with tin to prevent rust. The amount of heat extracted from the quantity of oil consumed is of a high percentage, thereby insuring the economy of the stove. The high shelf on the oil stove depicted herewith is handy for placing pots and pans containing food which is required to be warmed. Because of the glass tank used for fuel, the oil supply is always in plain view, so there is no need of letting the stove run dry. Operation of a Clark Jewel Oil Stove is safe. There is no danger because the oil is properly fed to the burners and is efficiently consumed, producing a hot, blue flame. This oil stove will last a long time, being made of high grade metal. A 1920 issue of Catalogue Number 108, describing the line of Clark Jewel Stoves, will be furnished upon inquiry to the George M. Clark and Company, Division American Stove Company, Chicago, Illinois.

CAN MAKE GOOD STOVE PATTERNS OF EITHER WOOD OR IRON.

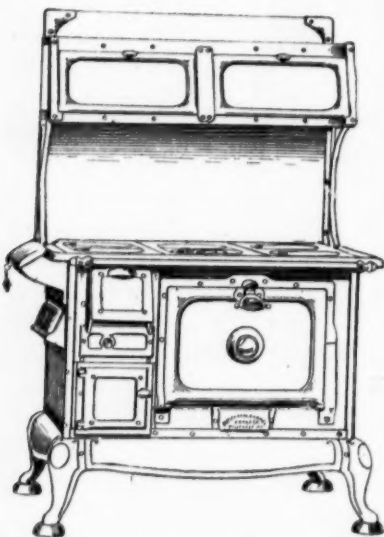
Iron and wood stove patterns of unusual workmanship are produced by the Quincy Pattern Company, Quincy, Illinois. Preciseness in detail is one of the characteristics noticeable in the inspection of a pattern made by this company. Only the latest type of machinery is employed, declares the Quincy Pattern Company. The materials which are used undergo careful selection. One of the remarks quite commonly heard from customers receiving patterns from this company for the first time, is concerning the unusual neatness with which the work is done.

The Quincy Pattern Company is equipped to comply with the most exacting specifications for stove

patterns—either in iron or wood. For complete details concerning stove patterns write to the Quincy Pattern Company, Quincy, Illinois.

GIVES GOOD ECONOMICAL SERVICE.

Besides its unusual neatness of appearance, the Roesch Enamel Range, illustrated herewith, has features which insure economical and efficient service.



Roesch Enamel Stove, Made by the Roesch Enamel Range Company, Belleville, Illinois.

The body of this range is constructed of a high grade, specially prepared enameling iron. Porcelain is fused into the iron with 2,000 degrees of Fahrenheit, insuring a sanitary and substantial finish that prevents all possibility of rust. Triple asbestos lined walls give the Roesch Enamel Range heat-retaining qualities. The inner wall is porcelain enameled on both sides. The oven is constructed of 16-gage patent level plate iron, well re-inforced with a cross-channeled cast iron brace on the bottom. An extra strong bracing prevents the top of the oven from warping. The joints on the range top are scientifically ground thereby making every joint invisible to the eye. A carefully designed cast base with long skirting enameled with nickel legs adds to the attractiveness of the range. For hardware dealers who desire to handle a reliable and serviceable article, the Roesch Enamel range will prove to be up to the mark of quality. These ranges can be had in blue, grey and white enamel and snowy white nickel finishes. When displayed in the window they attract much attention. Being sanitary, durable and neat-looking, Roesch Enamel Ranges appeal to the housewife. The facilities of the Roesch Enamel Range Company are all practically new and of the latest type. Though recently this company's plant was destroyed by fire, thirty days afterwards it resumed operations, replacing all machinery and equipments in the part of a building which was under construction. At the present, therefore, this company is producing at full force and is in a position to meet all needs for its ranges. Further information pertaining to this line of ranges can be procured from the Roesch Enamel Range Company, Belleville, Illinois.

OFFERS THEORIES TO REDUCE COST.

We hear hundreds of plans for the reduction of the general living cost. Every pseudo thinker offers his pet theory. But the real way is difficult, therefore, uninviting.

Get back to the simple tastes of the last generation,

forget the luxuries that you have come to regard as necessities, do not go to the theater and the ball game so often. But, after all, who wants to cut down the cost of living at that price?

MALLEABLE RANGE SHOWS NEW DETAILS OF CONSTRUCTION.

In the illustration herewith is shown a range which is said to be new in design. The Cole's Hot Blast Malleable Range is manufactured by the Cole Manufacturing Company, 3250-3280 South Western Avenue, Chicago, Illinois. Entering into the construction of this range are materials of high quality. The inner walls are made of a special iron, reinforced by a heavy coating of enamel. This is said to prevent the action of creosote and sulphur from destroying the iron. Thereby the durability of Cole's Hot Blast



Cole's Hot Blast Malleable Range, Made by the Cole Manufacturing Company, Chicago, Illinois.

Malleable Range is enhanced. In all details the range depicted in the accompanying illustration is made to give long and efficient service. The fire box is large and roomy. It is extra heavy lined and has a circulating air space in back, which insures proper ventilation thus adding to the life of the range and aiding combustion. The oven has a large capacity and the doors on it are accurately fitted. A feed pouch of generous size permits firing of any kind of fuel. The warming closet forms a handy shelf for many uses. Being polished and parkerized the cooking top on this range requires no blacking. Newly designed nickel trimmings add to the attractiveness of Cole's Hot Blast Malleable Range. To keep these trimmings clean is an easy matter. Cole's Hot Blast Malleable Ranges can be furnished either on legs or in cabinet form, as desired. Throughout these ranges show characteristics of high class workmanship. Dealers should write to the Cole Manufacturing Company, 3250-3280 South Western Avenue, Chicago, Illinois, and inquire for that company's illustrated literature which thoroughly describes its line of ranges.

A good system will help you to make one dollar profit grow where only a half dollar grew before. Systematize your business enough to eliminate the leaks and losses.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 58 to 63 inclusive.

The Hammond Hardware Company, Shewano, Wisconsin, has increased its capital stock from \$30,000 to \$40,000.

J. J. Jones Company, hardware, 1017 Third Street, Milwaukee, Wisconsin, has increased its capital stock from \$75,000 to \$150,000.

Builders' hardware and valves will be manufactured in a plant to be built by the Baltimore Valve Company, Baltimore, Maryland, organized with \$250,000 capital.

The Wake Forest Hardware and Machinery Company, Wake Forest, North Carolina, has been incorporated with a capital of \$50,000, by H. J., W. F. and H. P. Jones.

The J. H. Goldcamp Company, hardware, has been incorporated at Lancaster, Ohio, with a capital of \$175,000, by J. H. Goldcamp, F. F. Goldcamp, J. A. McCauley, Ed. Spies, and T. Brown.

COMMERCIAL REGISTER IS A GREAT SERVICE TO BUYERS AND SELLERS.

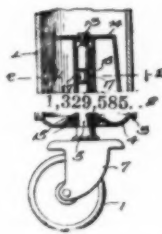
The 28th Annual Edition of "Hendricks' Commercial Register of the United States for Buyers and Sellers" for 1920 has just been published, after being delayed for two months by the strike of the printers in New York. It is published by the S. E. Hendricks Company of New York at \$12.50. The new edition contains several improvements. The most noticeable being the new methods of exterior indexing by coloring the front edge red, white and blue to indicate the different main sections of the book.

First is blue on which is stamped the words "Trades Index." This is a section of 162 pages in which every product listed in the book is indexed and cross indexed for ready reference. The red section is the main classified trades list. It contains 1,813 pages listing over 18,000 different products. In the present edition we find over 1,200 new headings including many headings completely covering the chemical industry. The third section of the book as indicated by the white edges contains 216 pages listing the trade names under which products are manufactured, with the name and address of the manufacturer. The second blue section is the Alphabetical section of 487 pages containing all the names in the book in one alphabetical list with addresses, and their main line of business. This is followed by the index to advertisers of 20 pages, containing a full list of branch and foreign offices following each name. The whole book making a volume of 2,703 pages.

It is an excellent work, a copy of which should be in every sales and purchasing department. For the former it contains complete lists of all prospective customers and for the latter it shows at a glance the producers of any product which may be required. The list of trade headings covers from the raw material to the finished article all products connected with the Electrical, Engineering, Hardware, Iron, Mechanical, Mill, Mining, Quarrying, Chemical, Railroad, Steel, Architectural, Contracting and kindred industries, and the firms listed cover Producers, Manufacturers, Dealers and Consumers. Copies of this valuable work may be obtained postpaid by sending the price, \$12.50, to Daniel Stern, Publisher and Bookseller, 620 South Michigan Avenue, Chicago, Illinois.

SECURES PATENT FOR A CASTER.

Under number 1,329,585, United States patent rights have been granted to Albert B. Diss, Newark, New Jersey, assignor to The Bassick Company, Bridgeport, Connecticut, a Corporation of Connecticut, for a caster described as follows:



In a top bearing caster, a pintle having its upper end formed with a convex bearing surface, a socket for receiving the pintle, a spring frame for retaining the socket in position, and a rivet securing the frame to the socket and passed through the top of the latter, the bottom head of the rivet being formed into a spherical bearing on which the convex pintle surface engages.

GUARDS PROTECT AGAINST ACCIDENTS.

Machinery and a fire guard of every dimension can be supplied by the Fred J. Meyers Manufacturing Company, Hamilton, Ohio. In the illustration herewith is shown a heavy wire guarding, manufactured by this company. Material of any specified gage will be used in the making of protectors for appliances. By use of the guards manu-



Manufactured by the Fred J. Meyers Manufacturing Company, Hamilton, Ohio.

fire and accidents can be averted. These guards protect workmen from getting caught in dangerous parts of the machinery. This company also manufactures a complete line of wire cloth and wire fencing. Readers interested in the products of the Fred J. Meyers Manufacturing Company, Hamilton, Ohio, should write them inquiring for catalogue.

Don't judge the purse by the clothes.

Convention of Ohio Hardware Association Teaches Lesson of Neighborly Spirit in Merchandising.

To be neighborly with one's customers is not a virtue difficult of attainment, but to be neighborly with one's fellow merchants and competitors in the same business is an achievement which can not be too highly commended. No single factor in the growth of the Ohio Hardware Association has been more potent than the spirit of neighborliness among its members. Cost finding systems, efficiency methods, publicity of the most attractive kind, and selling devices of the latest sort are of small avail toward success if the human interest element is neglected. That is why so much stress was placed upon it in the Twenty-sixth Annual Convention of the Ohio Hardware Association, held February 24, 25, 26, and 27, 1920, in Gibson Hotel, Cincinnati, Ohio.

Tuesday, February 24, 1920.

The forenoon of the first day of the convention, Tuesday, February 24, 1920, was spent in reception of members at headquarters at Gibson Hotel, registration, distribution of badges and tickets for the various entertainment features of the program, and opening of the Hardware Show in Music Hall. The first session of the convention began at 2:00 o'clock Tuesday afternoon in Music Hall Auditorium, with community singing under the leadership of Will L. Reeves, Community Song Leader of Cincinnati. The convention was then called to order by President Charles W. Lammers, and a brief invocation was made by W. P. Bogardus, Mt. Vernon, Ohio. The delegates were welcomed to the city by John Galvin, Mayor of Cincinnati. Hundreds of women were in attendance. They were welcomed by Miss Alice L. Englehart, President of the Cincinnati Business Women's Club. Then Warren J. Heldman, in behalf of the Cincinnati Traveling Men's Association, of which he is President, welcomed them, and William B. Melish, Chairman of the Convention and Publicity Committee of the Chamber of Commerce, greeted them in the name of the Chamber of Commerce.

The session then adjourned and those not entitled to remain for the Executive Session which followed withdrew from the hall and the report of the Committee on Nominations was made as follows:

For President—Albert Zettler, Columbus.
 For Vice-President—Charles F. Hauck, Springfield.
 For Secretary—James B. Carson, Dayton.
 For Treasurer—John F. Baker, Dayton.
 For Directors—(vote for four)—F. A. Walther, Bucyrus; R. F. Fawcett, Salem; Miles Watson, Oberlin; Fred Neile, Zanesville; Carl Babb, Xenia; Grant Waltz, Lima; O. P. Kraft, Sycamore; Edward Speasmaker, London.
 For Delegates—(vote for five)—Howard Vertner, Sidney; Harry Gardner, Bryan; L. M. Krieg, Newark; J. A. Trotter, E. Liverpool; Charles M. Rehburg, Cleveland; W. H. King, Geneva; W. A. Mapletop, Forest; C. C. Hewitt, Sedalia; J. A. Shipley, Richmond; Frank C. Massey, Osborn.

An open meeting for all members was held Tuesday evening, February 24, 1920, at 7:30 o'clock in the Assembly Room, of the Gibson Hotel. After singing by the entire assemblage, an address was deliv-

ered on "Industrial Unrest and its Effect Upon the Distribution of Goods," by Charles W. Asbury, President Enterprise Manufacturing Company, Philadelphia, Pennsylvania.

"It will be best for the hardware men," the speaker said, "to stabilize prices and keep them as low as their businesses will permit. Unemployment, which will result from continued high prices and restricted purchasing, will in turn cause social unrest. It is well to look beyond to the future, rather than gloating over the prosperous present."

Discussing the railroad situation, Mr. Asbury said: "Certain labor leaders threaten Congressional representatives with political extinction if they do not back up the railroad demands of labor leaders. It is time for business men to leave their narrow arena of personal activities and enter politics. The present inefficiency of rail transportation is restricting business. Write to your representative and assure him of the support of your business organization. It will give him confidence to ignore the political pressure of other sources."

At the conclusion of his address, Mr. Asbury was given a rising vote of thanks by the assembly.

Orrin Lester, Associate Director of Savings Division, Treasury Department, Washington, D. C., was the next to address the session. He spoke on "Facing the Facts of the Nation's Needs."

"There is only one way to work out the present economic problems and that is to continue to apply the simple prescription of intensive work and systematic saving," Mr. Lester said. "There is only one way to fight the economic battle of today, and that is to produce and save wealth. There is only one way to establish a proper proportion between credit and production, and that is to increase production. There is only one way to eliminate extravagance, and that is to practice economy."

"The question of wages will never be settled right in any country until we can make the slogan of industry 'Honest work for honest pay and honest pay for honest work.'"

"We can not increase production through strikes or preserve our goods through wastefulness or reduce prices through profiteering or protect our institutions through agitation. We talk about high prices, but in actual practice the price of goods does not seem to matter."

"'I'll take the best you have' is being overworked. No nation can produce the best of everything all the time. So long as people bid for and will accept only the so-called best—the best will be scarce and high in price."

"I do not know how many profiteers there are in this country, but I am convinced that the permanent and lasting solution of the high cost of living is much

more a matter of educating the public than of making convicts of profiteers. If prices are too high, we want to adjust the prices. If prices are not too high, we want to adjust ourselves to meet the prices.

"We have the control of our own pocketbooks, and the greatest need of this country is for us to police our private pocketbooks against the tendency toward personal extravagance and waste.

"The only substitute for gold in a nation's reserve is thrift. There is only one way to work out present economic problems and that is to continue to apply the simple prescription of intensive work and systematic saving.

"Industrial development has been retarded in Europe, and both capital and man power for their development has been and still is lacking.

"In view of these facts there is nothing very myste-



John Weigel, Chairman Exhibit Committee, Ohio Hardware Association.

rious about the low rate of exchange between the United States and European countries. The production of gold has to a certain extent been standardized. It is impossible to increase that production sufficiently to assure adequate reserves for increased issues of currency of the world.

"The United States can maintain and increase its reserves through the development of natural resources, expansion of industry and commerce and through initiation of new production."

Wednesday, February 25, 1920.

The morning session of Wednesday, February 25, 1920, began at 9 o'clock with community singing. The highly important question, "How Can I Increase My Business?" formed the principal topic of discussion during the first part of the meeting. Rufus Andrews of the Central Hardware and Stove Company, Akron, Ohio, led the discussion and elicited suggestion from the members which were received with hearty approval by the assembly.

Then came the annual address of Charles W. Lam-

He reviewed the fluctuations of the trade during the term of his office and paid a well-deserved tribute to the work of the Association's Secretary, James B. Carson. The full text of his address is as follows:

Annual Address of Charles W. Lammers, President Ohio Hardware Association, Delivered February 25, 1920, to the Twenty-sixth Annual Convention of That Organization in Hotel Gibson, Cincinnati, Ohio.

Another year has passed since our last annual convention and a great many of the hardware men's problems that we thought would be solved during the year are no nearer solution now than they were at that time. It is true we have made some progress but owing to the unsettled condition of the country we are as much at sea now on some of our questions as we were during the war.

When the world war broke out and prices began to advance, a lot of us were a little timid about buying, and bought only such goods, or in such quantities, that we thought we could dispose of at once, or within a short time, for fear we might be caught with a stock of high priced goods on hand, when the prices would go down again, or as the saying is, "When the Bottom Dropped Out."

Most of us can remember how a few years ago at our conventions, we talked about buying; a great many of our members were asking if it was a good time to buy with the prices up as they were. And we can well remember the difference of opinion among our members. Some of us thought it was time to be very conservative and not speculate as the prices on goods were getting too high to hold and we could look for a drop at any time.

Past Uncertainties as to Prices.

While others took a different view and could not see why we should not go right along and buy as usual, as they could see no chance for a decline in several years. I attended a local meeting about this time to which a number of jobbers were asked to meet with us and give their opinion on the situation. One of the jobbers had some old invoices with him that were made out during the Civil War and showed us that we might expect in the way of prices if the war continued any length of time.

That meeting was a help to all and we went home determined to go ahead without fear. As time went on and prices continued to advance the dealers all over the country took more courage, and were soon buying in quantities again.

Everything went along nicely until the Armistice was signed and every one was glad that the horrible war was over, but we were in for another scare of a drop in prices. With the war over the foreign governments as well as our own would not be in the market for any more supplies. What would we do when the factories that had been enlarged and speeded up on government work should go back to their regular lines and dump all their products on the market? Surely prices would have to take a tumble.

Business Gained New Momentum.

Business slowed up in some localities, and men working in the factories were laid off while the manufacturers were reorganizing their factories to swing back to their regular lines. This should have been expected, but nevertheless people began to get scared, and wondered what was going to happen when the soldiers came back, some of our men being out of work now. Where would we find employment for them and the soldiers later on? There certainly would not be enough jobs to go around. We were urged to push the sale of goods that would give employment to men, and wherever possible to give the returned soldier the preference.

This condition didn't last long for as soon as the factories got started again we found that instead of not having enough jobs to go around we didn't have enough men to go around. Instead of seeing long lists of situations wanted in our daily papers, you will see whole pages in large type letters advertising for help.

Prices Have Continued to Advance.

Prices have continued to advance and we are getting used to receiving almost daily notices like this: "Owing to the advance in labor, and the increased cost in raw materials, we are compelled to make a slight advance in our prices. New prices will be mailed on application."

Next we hear of the men demanding an increase in wages to meet the advanced cost in living, and so it goes on like an endless chain. Surely this can't go on forever, and there has got to be a halting place, but *where* and *how* are we going to stop it?

Production Is Not Equal to Demand.

Production is *now* at a very low ebb, and *no one* seems to turn out the amount of work he *formerly* did. A brick laying contractor told me a short time ago that since his men had been working on government work they would only lay about three-fourths as many bricks as they formerly did and that at a much *higher* price per hour.

A large manufacturer told me that in one of their departments where they used to work *fifty men* they are now employing seventy-five to do the same amount of work at a much higher scale of wages. This does not apply to workmen alone, but almost everybody is trying to get by with as little work as possible. Is it any wonder that we have this High Cost of Living?

Let us don our overalls and put our shoulder to the wheel, and each and every one of us do as much as we can instead of trying to get by with as little as we can, and then, and only then, the scarcity of goods, and the high cost of living will soon be things of the past.

In spite of this high cost, everybody seems to have money; and the working classes are living better today than they ever did, and as they are a class that spend their money freely, but a very small percentage of them save anything at all.

Causes of Social Unrest.

With all this prosperity there is also an awful lot of unrest and dissatisfaction throughout the country, each class seeming to think they are getting the worst of the deal. Neither our country, or any other country, has ever before been known to enjoy the prosperity we are having, and it is only because of mischief-making agitators, that so many of our people are dissatisfied.

Our government has taken a step in the right direction to put a stop to this, by making good and an unusual use of some of our transports, and it is my hope that they will continue to do so until the last disturber is taken forever from our shores, for if they don't like our form of government, let them go back to the country whence they came and have a government to their own liking.

Officers of Association Have Worked Hard.

Now to come down to our own immediate affairs.

The officers of your Association have been working faithfully the past year, and we had set a special mark and made earnest efforts to reach it. Your President and Secretary took part in the National program at Pittsburgh, where the problems of all the different state associations were gone over, so that we might be of assistance to each other. The other states were particularly anxious to hear something about the working of our new Legislative Committee.

Ours was the first and only permanent committee of its kind, and that it was not a mistake in appointing this committee you all know from the work it has accomplished.

Your president was on the program to explain some of the work, and after telling them of what had been accomplished, he called upon your secretary and Mr. Gray, both of whom served on this committee, and asked them to tell the convention just how they went about their work. In this way we got over it very thoroughly, and I think some of the other states will profit by what we told them as they also are thinking of having their Legislative Committee become permanent.

Commends Directors for Attending Meetings.

The attendance of our directors' meetings for the year has been almost one hundred per cent, and I, therefore, want to take this opportunity to thank them for the good and kind support they gave me as President, as some of them had to lose almost two days' time from their business for each of these meetings on account of railroad connections. They are, therefore, to be commended for the time and work they have given the association.

Your President, Secretary and Secretary of Insurance attended the Secretaries' Convention at Chicago and as this was strictly a secretarial meeting, nobody of course, but they could have anything to do or say. But it was surely a good place to sit and listen as they thrashed out their own problems; and, of course, each secretary believed that his suggestions either good, bad or indifferent, would necessarily have to be put through, as otherwise the state organizations—"would go straight to hell" in a hurry, if not protected by these humanitarians.

I feel very proud of the place our Association holds among the other associations, and also of the progress we are making. We have made greater strides the past year than we have made for some time. Your secretary has had a very busy year, and spent a lot of time out among the dealers attending group meetings, trying to get the dealers better organized and helping them in general.

Praises Secretary for Increasing Membership.

I attribute a great deal of our increase in membership to his work among the dealers and also to the work of our insurance department, as no hardware dealer is entitled to Hardware Mutual Insurance unless he is a member of the O. H. A. That *alone* ought to be an inducement for any dealer to become a member, to say nothing about the other benefits he would derive. I would, therefore, recommend that our secretary continue to spend as much time among the dealers as he can, without interfering with his office routine, and that as soon as we can procure a suitable man for field work that we do so, so that we may have a man out among the dealers at all times, who will attend their group meetings, and who can assist them in store management, stock arrangement, accounting systems, etc.

I am sure this would be one of the biggest helps our

Association could give its members and when a non-member sees what we are doing for our members, he also will want to come in, so that he can get the help the other fellow is getting and thus improve his business also.

Let a man paint up his house and give his premises a general overhauling. If his neighbors' places are not in first-class condition the contrast will be so great and their places will be shown up so much, that they will all clean up, and soon the whole neighborhood will so change its appearance that you would scarcely recognize it as the same place.

In fact, I know of a short street in a certain small town where one of the people living there put sod between the walk and curb in front of his home and also planted some shade trees there. His neighbors, seeing the improvement, did likewise, and now each one on that street has sod and trees between the walk and curb and each is keeping his premises in tip top shape, and they certainly have a splendid community pride and spirit, the result of this first man's effort. What is true in this particular case will probably be true in the hardware business.

Working Together for Common Good.

Get a man into the Association and let them get better acquainted with their competitors, and when they go back home from the convention, instead of being competitors, they will be co-workers and they will think more of each other instead of being selfish, and instead of fighting each other they will be fighting together. When two dealers get to fighting each other, the public usually reaps the benefit, and consequently the dealers lose. That reminds me of the old story of the two snakes that were coming along a path in opposite directions, and when they met they were both angry and made a jump at each other, and as it happened each got hold of the other snake's tail and began to swallow, and when they were both through there was no snake left. So likewise with two dealers; let them get to fighting each other, and by the time they are through there is apt to be neither of them left.

Use Careful Judgment in Buying.

We are starting the year 1920 under about the same conditions that confronted us during the past year. Prices are still advancing, and we are again wondering if it isn't time to slow up on buying; but with the scarcity of goods it doesn't matter much if we buy heavily or not as we don't get what we order any way and there is not much chance of getting overstocked. Every dealer should if possible attend his state convention this year, and after getting all the facts he can, should judge his business accordingly, as no one is able in such times as we are going through to give you any definite information in regard to the future business conditions. It seems to be all guess work, and one man's guess is about as good as another's. The pendulum has been swinging upward for several years and business has been good, but when it starts to swing backward and prices begin to drop, then is the time you will especially need the assistance of your association. It is easy to sell on a rising market, but let prices go off a little, and see how quickly the public will slow up on buying.

We should face the new year with courage, but be conservative and keep in close touch with your association and I think we need have no fear of not making this a profitable one.

Work Together with Hand and Heart.

In conclusion, I wish to assure you that I fully appreciate the honor of serving as your President during the past year, and when I hand the reins over to my successor I hope that with your assistance to have finished one of the best years and most successful conventions of our association, for we know that if we will but work together, with hand and heart, we will not only remain one of the greatest and most progressive organizations in the country, but also accomplish in the future the greatest possible results, in the shortest possible time.

The value of group meetings in developing a strong spirit and practice of cooperation among the members of the organization was convincingly set forth by James B. Carson, Secretary of the Ohio Hardware Association, in his annual report to the Convention, which is herewith reproduced:

Annual Report of James B. Carson, Secretary Ohio Hardware Association, Delivered February 25, 1920, to the Twenty-sixth Annual Convention of That Organization in Gibson Hotel, Cincinnati, Ohio.

In making my report to this convention, I can not help feeling a great deal like you do after you are through with your inventory and find you have had the best year in the history of your business, for this is just what our Association has had, the best year in all its departments since it was organized twenty-six years ago.

Members Are Full of Enthusiasm.

There has been more enthusiasm among the membership, every particle of mail that came into our office seemed to

vibrate with it and in my visits to different parts of the State, it seemed there was so much of it that you could smell it like you can when you drive out into the country in the spring time when the blossoms and the clover are sending their fragrance everywhere.

Several reasons might be mentioned for the increased activity in association work, for it is not confined to any one association nor to any one state, but the principal reason is the urgent need of dealers in the same line of business to harmonize their efforts in the elimination of waste in their operating expense, in order to bring to the consumer all his merchandise and supplies as cheaply as they can be brought to him from any other source.

Dealers Are Purchasing Agents for Their Customers.

I can truthfully report to you at this convention that our members in all parts of the State are better equipped at this time to take care of the hardware business, the implement business, the stove business and all other kindred lines to their business, than they have ever been. There are more of them that have money to go into any market where they can get the best price to buy the goods their customers will want, because our members have begun to realize they are the purchasing agents of hardware for the different communities in which they live and that only so long as they serve their community economically, can they hope to command the volume of business.

Ohio Hardware Men Discount Their Bills.

A prominent jobber of our State just recently said to me, that the work of our Association was bearing fruit and



James B. Carson, Re-elected Secretary Ohio Hardware Association.

when I asked him to what he referred, he said that ten years ago, less than 50 per cent of the accounts of the customers on their books were discounted, but that now more than 85 per cent of their customers were discounting their bills. He said that while some of this difference might come from changed conditions, yet he was firm in his belief that our association work in bringing dealers together, was responsible for the greater part of this increase.

Constant Improvement Is Going On.

There is a decided tendency among our members to get together more than they have been doing in the past. Our annual convention does not seem to satisfy them only in a general way. They want to get into a conference with their neighbors and talk over with them their own business affairs, the things that will be necessary to do in the hardware business next week or next month. They are analyzing the people of their community, finding out where they are buying their goods and why. They are not satisfied with just having a hardware store, they realize they are doing a life's work and they want to do it well. They are installing better accounting systems in their stores, they are doing away with guess work in their business. They are modernizing their stores in order to wait on their customers quickly and intelligently. They are not satisfied with the old way and this is the best index to progress you can find.

One member in not a very large county seat town just recently told me that they did \$250,000 in sales the past year, while another member in a trifle larger county seat town and

both in agricultural counties, told me their sales on the Saturday before Christmas were more than \$1,000 for the day. Both of these stores have been members for twenty years or more.

Group Meetings Are Common.

But the work of our Association is just getting started. It has taken twenty-five years of preparation to build an organization like we have now. Last year we celebrated our silver anniversary and I predict by the time our golden anniversary comes around, the members, in looking over the past records of our Association, will wonder how we ever did business as some are still doing it. There are still many places in our State where the dealers never get together. They belong to that class who think because they bought a hardware store and paid for it, they have a right to run it to suit themselves. This kind of a merchant has never had a vision of his real sphere in life. No one can run a business to suit himself, the customers who come into his store have a great deal to do with any plan he may make merely to suit himself. There are always other dealers from whom they can buy. It is this class of dealers who are becoming more interested in our work, probably more in the past year than ever before. Local organizations and group meetings have done a great deal toward removing prejudice against association work and selfishness among the dealers in a town or given territory.

Group meetings mean the bringing together of a group of dealers in any district who can get to a meeting in a town that is convenient and easy of access to all of them and who are all interested in the volume of business done in that district. During the past year, several districts have held these meetings, some having held as many as four meetings and some are holding them monthly since they have started. I predict that many other districts will start these meetings the coming year. No business man ever talked over his business affairs with others in the same line of business, who did not make improvements in the conduct of his business that led to greater success and it was this that inspired the group meeting idea. Long ago we adopted a motto: "It is the business of The Ohio Hardware Association to make better Hardware Merchants." Local and group meetings render a great help in the accomplishment of our object.

Explains Popularity of Question Box.

I have never attended a hardware meeting where the dealers did not want to talk about their own business and tell what they are doing in their own stores. This is what makes our "Question Box" so popular at our conventions. The big question in the past has been to get the dealers together but when once this has been accomplished, it is no trouble to get them to talk.

The group meeting idea is not original with our office. We are frank to admit we copied it from the State Bankers' Association who have the State divided into nine groups who meet at least once a year outside of their annual convention. Now bankers as a class of business men are a pretty safe class to pattern after and if they find they make a safer and better banking business by all getting together and talking over conditions that will insure to the depositors a greater security and a safer business, why is it not just as necessary for all our hardware dealers to get together and talk over what they can do to make the hardware business better and to find out whether or not they are furnishing all the hardware that is sold in that district. What would bankers think if their business men were sending to another town to borrow money? Everyone knows that banks are established for the convenience of the people, yet in the past some of our hardware dealers have seemed to think their store was different from the bank, that it was just for them alone. It is in these meetings where one gets the bigger and broader view of life and he realizes that like the bank, his store is there for service also. Your secretary has attended during the year sixteen of these meetings with an average attendance of about thirty-five. All of these meetings have been held in the northern half of the State. There is some reason for this, the towns are closer together and traction service is better. But in these days of automobiles, there are eight months in the year when the dealers in any part of the State can get to a meeting if the desire to have such a meeting is created. At a meeting held in Fostoria, five dealers came from Findlay in an automobile together.

Ohio Hardware Dealers Free from Profiteering.

Our office has been sending out the notices for the meetings, arranging the program and relieving the local members from the clerical work as much as possible. I am glad to be able to report to you that in all the meetings I have attended, not one word has been mentioned about capitalizing the spirit of friendship manifested, for the advancement of prices on their goods. In some meetings there has been some talk of buying some classes of goods together so as to get the quantity price so as to be able to meet any competition. One of the meetings held in Lima was during the time their grand jury was in session investigating the high cost of living and looking for profiteers. The next morning the Lima dealers were summoned before that body and asked

the purpose of the meeting held the night before. After they had been questioned, they were told they were to be commended for coming together in the way they did for it meant that Lima will have better hardware dealers. In this connection, let me say that we should feel proud of our membership because there has not been a single complaint against a hardware store for profiteering. It is the cheapest commodity on the market today and is additional evidence of the progress of our association work.

Value of State Headquarters for Information.

During the year, our office has tried to keep you informed as to business conditions. The individual correspondence with members has more than doubled as compared with preceding years. More members are asking our office where they can buy certain lines of goods to take care of their trade. In addition to our Ohio Hardware Exchange which we issue every month in which we have given information that we felt would be of interest to our members, we have written more than three thousand letters to members, not circular but personal letters. Wherever it was impossible for us to give the information asked, we have passed it along to our National office and I am glad to report that not a single inquiry has come into our office without the information having been given promptly. These inquiries are almost always in connection with something in special goods called for and which are not carried in stock. We believe the demand for this service will be increased this coming year, that the tendency of the times will make it necessary for our members to exert themselves to greater effort to keep pace with the demands that will be made upon their business. This is what our office is for. We welcome all communications and correspondence from members because the evidence of our progress in making better hardware merchants will be measured by the interest of the members in their state headquarters.

Our Insurance Department.

While our secretary of insurance will make his own report, yet I feel that my report to you will not be complete if I do not give to our members some report of the part they have taken and the help that has been given in the campaign to bring more dealers into the association. Our secretary of this department, Mr. Gray, has been with me at several of the meetings previously mentioned and it was astonishing how much information was asked of him in regard to the different kinds of insurance and the different forms of policies. It seems to me that every county in the State should have a meeting of their dealers and invite him to be present, just to know that their insurance policies are right. There is nothing so valuable to you when you need it as your insurance policy. Your local agent who makes his money by writing insurance, is decidedly more interested in the commission he gets on the premium than he is in the form of the policy and he does not bother himself to explain to you why you should have a certain kind of insurance or should have a certain form attached to your policy. You can have the service of our secretary free at any time by writing our office or writing his office direct.

Carry All Insurance in Hardware Mutuals.

It is possible now for our members to carry all their insurance in the hardware mutuals. In addition to our own company, there has been admitted into our state other hardware mutuals so that after you have all you can carry in our own company, the balance can be placed with the other companies. It is the best protection we can get. Our own company has a desk at our headquarters and will give you any information about your policy, or take your application for additional insurance or for new business. In addition to our own department, Davis Brothers, who represent several of the other state companies in our State, have a desk at the exhibit hall in the lobby, and if you have your limit with your own company, take the balance with them. It is possible for every member to pay all his convention expenses out of his saving in his insurance premiums. Now just remember this, that because of your State Association it costs you just about half as much today to carry your insurance for protection against fire on your home, your store buildings and stock and any other property you may have, as it would if we did not have a State Association. This is another department that has shown wonderful progress. Carry the limit with your own company and place the balance with the other companies. The more insurance you give them, the larger the dividends they will return to the policy holders.

Our Legislative Committee.

There will also be a separate report of the Legislative Committee, but I want to urge upon you the importance at this time of having a permanent Legislative Committee. It seems to me that we should associate ourselves with a like committee from the Manufacturers' Association. There are many reasons why this should be done. The need of such a committee was demonstrated during the past year when quick action was necessary. It is always well to be prepared to explain to our representatives in our legislature, our side of any bill that may be introduced that will interfere

in any way with our rights of citizenship. This was what had to be done quickly last spring when our legislative committee put through an amendment to our law regulating the sale of poisons, so that our members could legally sell all materials used for spraying purposes. Concentration of effort will overcome many evils.

Our National Office.

I am glad to report to you that our National office is cooperating with us in every way. That the relations existing between the National and the State are closer than they have ever been. There is a desire in both organizations to work along the same lines. Both our National office and our State office need the cooperation of the membership to a greater extent in correcting some of the price evils that still exist. There are too many members that are like the good old Presbyterian lady who said what is to be, will be and there is no use in trying to change it. I also am a Presbyterian and think this doctrine is fine as a last resort after you have exhausted all your efforts. It is a great consolation to fall back on. But the power we have for making reforms will do wonders and it only needs to be concentrated. You have the opportunity to concentrate this power, first through your state headquarters and then through the Nation. The work in their office is now so interwoven with our own, that the progress of one means the progress of both. In the new constitution and by-laws adopted at the National in Pittsburgh, both organizations are tied closer together. Our Association now makes monthly reports of all activities to the National office and in return their office report to us so that each office is in constant touch with all the work that is going on, or what is being planned. Our National secretary has visited the officers of the different states at a meeting of their directors and through this acquaintance has grown closer personally to the officers of each State Association. The amount of progress to be made in the National Association depends upon the active support of the membership of the different states. Just as our dealers in our own state have accomplished much in making better hardware merchants, so does our National band all our states together in helping to make still greater reforms.

Our Convention.

Our program this year should appeal to every member in attendance for it does not seem possible that any dealer can come to this convention and stay four days without taking back home with him something that has been said, or done or seen, that will be helpful in his business. The meetings this year have been arranged with special care in providing subjects for discussion, subjects that are of interest to every dealer in the State and those who come to this convention and do not attend the meetings in this room, will not get all that is coming to them from their membership. The speakers on the program have been selected because of their knowledge of the subjects on which they will talk. Hundreds of years ago it was written, "He Who Thirsteth After Knowledge Shall Be Filled." There never was a time when one should know more about his business than right now if he wants to keep up with all that going on around him. We feel sure this can be made the most profitable week in the year for your business.

Refers to Hardware Exhibit.

In preparing the program, we prepared the exhibit part just as we have told you we planned the meetings, with special care. You will find in the exhibit hall one of the greatest displays ever seen at any convention. You will find all kinds of hardware and kindred lines carried in stock. Your directors feel that this part of the program should also receive the time and attention it deserves and have given the entire afternoon of each day to this part of it. To stimulate your interest in the exhibition, our directors giving one hundred dollars in four cash prizes to the members who place the most orders with exhibitors, to be divided, forty, thirty, twenty and ten. Remember, this is for placing the greatest number of orders. Exhibitors have been provided with pads for records and all that is necessary is for each member to sign the name of his firm. These pads will be collected at the close of the exhibit.

Every exhibitor is entitled to consideration and courtesy from you, even though you do not handle his line, for the time may come when you will want to make a change. It is always a good plan to know some other line just as well as you know the line you handle. It makes you surer of your position. You feel that you are not living up to your capacity in your business life. That you still have some gas in the reserve tank. Study the displays and get acquainted with the manufacturers and jobbers who are making them. Remember the salesman is usually your best friend. If you can give them orders for such goods as you are going to need, if they can increase their business to justify the expense of the display, you not only have come in direct contact with the people from whom you buy goods, but you have given encouragement to them and through this acquaintance has grown a closer business relationship with them which always insures to you their very best price throughout the year.

While the four days of the convention have all been given to the business part of the program, the nights, with the exception of one, have all been given over to entertainment, and we feel that this part of the program has not been neglected and that it will greatly add to the pleasure of your visit to Cincinnati. Right here I want to remind you that we have as guests at this convention many members from adjoining state Associations and it should be a pleasure to extend to them all the hospitality of our State and to make them feel that we are glad to have them with us. We want them to take part in our meetings, maybe they are doing things in their states we have not thought of.

Cincinnati Hardware Club.

This city is particularly fortunate in having a Hardware Club, formed years ago when we first held a convention in Cincinnati, the membership of which is made up of manufacturers, jobbers, salesmen, and retailers, who are always a committee of welcome whenever our convention comes to their city and who will be busy during your entire stay, looking after your comfort. With the exception of the theater party on Thursday night, they have planned the entertainment. A special Ladies' Committee will give their time to seeing that the visiting ladies will not be a tax on the time of their husbands who will want to attend the sessions of the convention. Your president and secretary as well as the local committee have given much time and thought to the details of this convention and our full board of directors, as well as the local committees appointed, will be at your service during the convention.

Cincinnati Hardware Guild.

Cincinnati also has a local retail hardware organization, the Hardware Guild, the membership of which is made up of retail hardware dealers in Hamilton County and which it was my pleasure to help organize. When it came to choosing a name for the organization, M. A. Griffith of Madisonville, suggested the name, Hardware Guild, which was at once adopted. Mr. Griffith, who is now more than eighty-five years old, has been one of our most loyal members for a great many years. He has now retired from business but still enjoys coming to our meetings and I suggest that at this convention, he be made a life member without dues.

Increase in Membership.

At the beginning of my report, when I said that this had been the best year in the history of our Association, in addition to what has been reported, I also had in mind the increase in membership during the year. My report to you at the last convention showed, 977 active members, 201 honorary members and 376 traveling members. At that time our constitution was changed so as to have the books of the secretary and treasurer audited by a certified accountant, which made it necessary to close the year on February 1st. At the time of closing our books, our record showed that we had 1,161 active members, 203 honorary and 472 traveling members. We have set our mark for 1,500 active members and we believe at the close of this convention, we will have 1,200 of them. We want you to go back home with your mind made up to help us reach this mark. Remember your neighbor will be a better dealer and a better friend to you in the Association than he will be out of it.

Set an Example of Honesty and Service.

In reviewing the work of the year, I assure you it has been a very pleasant and prosperous year with most of us. We are ready to start the new year with all its uncertainties, full of enthusiasm for our business, but let us not forget our duty as citizens, our hearts should be full of gratitude to our Creator for this splendid country he has given us; let us pledge ourselves anew to protect its institutions with our lives if necessary in order that we may preserve it for our children as our fathers preserved it for us. Let us do what we can as citizens to bring back to men conscience in all dealings so that a dollar spent no matter how, whether for the necessities of life or other supplies, or for labor, will bring to the one who spends the dollar a full dollar's worth. May we in our own institutions, set the example to others by teaching the dishonesty of accepting pay for service we do not render, or wages which we do not earn.

The report of Alex M. Glockner, Treasurer of the Ohio Hardware Association, gave a satisfactory summary of the organization's finances and indicated that excellent results were obtained from every dollar received and expended during the year.

Following the Treasurer's account of the funds came the report of George M. Gray, Secretary of the Insurance Company which is to all intents and purposes an integral part of the Ohio Hardware Association.

President J. P. Duffey of the Insurance Society

was unable to be present because of the serious illness of his wife.

After the report of the Secretary of the Insurance Society came the election of Directors of Insurance and the report of the Legislative Committee. This was followed by an address on "The Changing Order" by R. W. Hatcher of Milledgeville, Georgia, Director of the National Retail Hardware Association.

"Although I am a Southerner," said Mr. Hatcher, "I am free to state that conditions are shaping themselves which will induce Southern business men to vote independently of any political party.

"There are too many lawyers in Congress," he declared, "listening to the crack of the party whip or to the sullen mutterings of promoters of class legislation and doing nothing while the nation's greatest in-



George M. Gray, Secretary Insurance Society of Ohio Hardware Association.

terests lie, languishing for lack of remedial legislation."

The afternoon of Wednesday, February 25, 1920, was devoted to the Hardware Show in the north and south wings of Music Hall. This exhibition is said to be the largest ever held by any State association in the hardware business. Every commodity sold in a hardware store, from a tack to a tractor, was on display.

Wednesday evening at 7:30 o'clock a smoker and vaudeville were given to the delegates in Hotel Gibson Ball Room by the Hardware Club of Cincinnati. In the slangy phrase of the program, the entertainment was described as "a jazzy night of pep and punch." It was all of that—and more. Gloomy thoughts had no more chance of survival in the atmosphere which pervaded the joyous evening than a pork chop in cotton-picking time. If there was anyone present who did not get any fun out of the smoker and vaudeville it was because he was deaf, dumb, blind, and sound asleep.

Thursday, February 26, 1920.

From 9 a. m. until 12:30 p. m., Thursday, Febru-

ary 26, 1920, the Convention held a Business Session in Gibson Hotel. Liberal use was made of the Question Box, particularly with reference to "Store arrangement and handling of stock." The discussion was led by Albert Zettler, Vice-president of the Ohio Hardware Association.

"Allow your customers to go back of the counters and everywhere else in the store that they want to go—except into your safe," said Mr. Zettler. He outlined his ideas of the new and modern type of stores that have made his place at Columbus widely known. "Mark the price on all goods and let the customers pick up and handle the articles—do not make the customers look at the goods through glass cases. If they can handle the articles they will buy them without much help from the clerk—a sort of self-serve business is developed, and people will buy the higher-priced articles, as a rule."

An interesting address on "Tools" was made by Horace Disston of Henry Disston and Sons, Incorporated, Philadelphia, Pennsylvania.

Henry A. Squibbs, Assistant Manager, Fence Department, American Steel and Wire Company, Chicago, Illinois, spoke on "Existing Conditions in the Nail and Wire Markets."

A striking contrast was afforded between the present methods of making nails and that of more than half a century ago by M. A. Griffith of Madisonville, Ohio, who is 80 years of age and the oldest member of the Ohio Hardware Association, who was elected an honorary life member of the Association during the Convention. Speaking at the opening of the Convention he said:

"Sixty-two years ago I was employed making large wooden nails out of hickory, and those nails sold cheaper than the same size wire nails sell today. I received 12½ cents a hundred for making the wooden pegs. But now they turn them out by the thousands with machinery. I would split the hickorey and then trim the nails down to eight corners with a plane."

A. H. Vayo, Sales Manager Eclipse Manufacturing Company, Indianapolis, Indiana, gave an instructive talk on "How Can I Make an Automobile Accessory Department Pay?"

Thursday evening at 8 o'clock the Annual Theater Party for all the members and ladies of the Ohio Hardware Association was given in Keith's Theater. An excellent program was presented.

Friday, February 27, 1920.

Methods of Distribution formed the chief topic of the business session of the Convention, Friday morning, beginning at 9 o'clock. The discussion was led by James B. Carson, Secretary of the Ohio Hardware Association.

R. A. Peterson, formerly Assistant Secretary of the Wisconsin Retail Hardware Association, delivered a speech on "You and Your Business."

Reports of committees and routine matters occupied the remaining part of the session until adjournment.

The balloting for officers for the ensuing term resulted in the election of the following members:

President: ALBERT ZETTLER, Columbus;
Vice-president: CHARLES F. HAUCK, Springfield;
Secretary: JAMES B. CARSON, Dayton;
Treasurer: JOHN F. BAKER, Dayton.

The committees who had charge of the various details of the Convention earned the grateful appreciation of the delegates by the zeal with which they performed the tasks assigned to them. The title and personnel of these committees are as follows:

Nominating.

C. C. HELLER, Beaverdam;
HOMER P. SMITH, Ashtabula;
FRANK C. MASSEY, Osborn;
H. B. McGRATH, Cleveland;
J. P. DUFFEY, Greenville.

Legislative.

GEORGE M. GRAY, Coshocton;
CHAS. M. REHBURG, Cleveland;
JAMES B. CARSON, Dayton.

Resolutions.

JOHN HERBERT, Cincinnati;
C. A. TOPE, Carrollton;
R. F. FAWCETT, Salem;
D. PICKING, Bucyrus;
WM. DEWESE, Delphos.

Memorial.

C. L. GWALTNEY, Lockland;
T. V. MILLIGAN, East Liverpool;
JOHN FUHR, Williamsburg.

Exhibit.

JOHN WEIGEL, Cincinnati;
FRANK HAMBURGER, Dayton;
CHAS. KOBMANN, Cincinnati.

In point of numbers, practical ideas, and neighborly exchange of helpful experiences, it was the biggest and most successful Convention ever held during the twenty-six years which have elapsed since the formation of the Ohio Hardware Association.

CONVENTIONALITIES.

The Front Rank Furnace Company of St. Louis, Missouri, had a very interesting exhibit and showed their all steel warm air heater. Their exhibit was in charge of A. F. Fanning and H. A. Beaman.

The Atlantic Stamping Company of Rochester, New York, showed a number of their sheet metal specialties and their goods were in charge of D. A. Brown and W. P. Berry.

The Simonds Manufacturing Company of Fitchburg, Massachusetts, and Chicago, Illinois, had a fine exhibit of their different makes of saws and they distributed considerable printed matter by their Mr. J. W. McLane, George R. Bird, Charles F. Sader, and R. A. Gilchrist.

The Globe Stove and Range Company of Kokomo, Indiana, had a very large exhibit and they showed one of their pipeless furnaces as well as one of their combination gas and coal burning ranges and one of their ranges showing the enamel finish. Their exhibit was in charge of Fred Ruddell, J. F. Bull, W. A. Cooper, John Belschwender, and I. G. Huston.

The Peerless Foundry Company, of Indianapolis, Indiana, had a very interesting exhibit and they showed one of their Peerless Wrought Iron Warm Air Heaters as well as their Peerless Pipeless. Their exhibit was in charge of J. R. Strahlendorf and Phil Getz.

Vaughan and Bushnell Manufacturing Company, Chicago, Illinois, showed a number of their tools to their many friends who were interested in the showing of their exhibit, which was in charge of Gus Ruhling and L. T. Dohn.

George Beaudin was much interested in showing the tinner snips and cutlery made by J. Wiss and Son of Newark, New Jersey, and he was assisted by H. O. Williams and L. H. Pettit.

One of the decided novelties was exhibited in the display of the Trenkamp Stove Company of Cleveland, Ohio, and consisted of a gas baking stove showing a large size baking oven which could be instantly changed to two smaller ones. It was a worth-while novelty and was known as a double oven small cooker. Their exhibit was in charge of Henry Trenkamp and John J. Mullen.

The Berger Manufacturing Company of Canton, Ohio, manufacturers of sheet metal specialties, were well represented by their H. O. Wilson, who was assisted by W. S. Fulton, A. E. Watson, E. Bechel, Sam Keller, and H. B. Resch.

Hall and Neal Furnace Company came down from Indianapolis, Indiana, to show one of their all cast warm air heaters and their exhibit was in charge of Harry Neal, C. J. Neal, and R. S. Thompson.

The W. E. Lamneck Company, Columbus, Ohio, showed a number of their specialties including their Lamneck Perfected Double Wall Pipe, and the exhibit was in charge of Arthur P. Lamneck, F. F. Foster, and Wm. S. Gordon.

The Monitor Stove and Range Company of Cincinnati, Ohio, showed their well known Caloric Warm Air Heater and distributed a lot of their printed matter. Their many friends' wants were looked after by H. Niehaus, Robert Fleming, and Ray Thomas.

Henry Disston and Sons of Philadelphia, Pennsylvania, had a very interesting exhibit of their saws and tools. They had a very fine display and it was in charge of L. L. Nelson and Ernest Query.

Chas. T. Lawton was busy handing out a useful souvenir, cutlery and manicure sets of the Cattaraugus Cutlery Company of Little Valley, New York, which concern Mr. Lawton is now representing.

John Dekker represented the Buffalo Sled Company of North Tonawanda, New York, and had a fine exhibit. Mr. Dekker gave away a beautiful calendar with the compliments of the Buffalo Sled Company.

E. C. Atkins and Company, Indianapolis, Indiana, had one of the largest exhibits at the convention. The central piece of this company's display was made up of 88 electric lights forming its trade-mark—"AAA." The company was represented by S. F. Perrigo, A. Mertz, and Ed. Norvell.

One of the busiest exhibition booths was that of Gohmann Brothers and Kahler Company, makers of Pointer Ranges. Their exhibit was in charge of Charles Gohmann and F. E. Vernia.

Among the out of state visitors were Leon D. Nish of Elgin, Illinois, and E. M. Healey of Dubuque, Iowa.

Ed Hoffeld was very much in evidence in the corridor of the Hotel Gibson and he distributed as a souvenir elbow-shaped India rubber erasers, with the compliments of the Ferdinand Dieckmann Company of Cincinnati, Ohio.

ADVERTISING AIDS CAN BE OBTAINED UPON INQUIRY.

The Continental Company, Detroit, Michigan, has obtained a supply of 50,000 display signs and cards to aid dealers in advertising the products made by that company. Besides, this company has on hand

several million illustrated circulars and folders, together with a large number of electrotypes and moving picture slides which it will furnish retailers upon inquiry. To the dealer who has had occasion to turn advertising helps into ready cash, an offer in the nature of the foregoing is not permitted to be wasted. Write to The Continental Company, Detroit, Michigan, in order to obtain the publicity helps it is desirous of furnishing retailers.

SOUTH DAKOTA HARDWARE DEALERS HOLD HELPFUL CONVENTION.

An intensive postgraduate course in hardware merchandising, is the best description which could be given of the annual Convention of the South Dakota Retail Hardware Association which was held February 24, 25, 26, and 27, 1920, in Cataract Hotel, Sioux Falls, South Dakota.

The first day was devoted chiefly to the Hardware Exposition in the Coliseum, which was open from



H. O. Roberts, Secretary South Dakota Retail Hardware Association.

9 a. m. to 6 p. m. for hardware dealers only. Everything in both bench and heavy hardware was on display. Many novel appliances for household, farm and city building were exhibited in an attractive manner with salesmen eager and anxious to explain the merits of their respective lines. For the women labor saving devices such as power washing machines, vacuum cleaners, and lighting systems were shown, while the men found themselves interested in the displays of automobile oil and greases, spark plugs and farm implements.

An Executive Board meeting was held at 10 a. m. in Cataract Hotel. In the afternoon the local hardware dealers of Sioux Falls acted as hosts in a "get together" meeting. In the evening, the hardware exposition in the Coliseum was thrown open to the general public. Crowds of visiting dealers and Sioux Falls residents thronged the main floor of the build-

ing, listening to a delightful concert and inspecting the attractive exhibits.

The morning session of the second day of the Convention, Wednesday, February 25, 1920, began with community singing, after which a brief invocation was made. Then H. B. Johnson, President of the South Dakota Retail Hardware Association, delivered his annual address to the assembly. While not ignoring the discouraging features of the industrial and social situation during the past year, he took pains to emphasize the reasons for optimism in regard to the future. He expressed his confidence in the sanity and justice of the American people and declared that the hardware dealers of South Dakota can do much toward stabilizing the civic and commercial forces of the country for their own and their neighbors' benefit and betterment.

The annual report of H. O. Roberts, Secretary of the South Dakota Retail Hardware Association, placed special stress upon the need for better merchandising service, greater care in buying and selling, stock-keeping, credits, and accounting system. He made an earnest plea for more thorough coordination in state activities and closer cooperation among local dealers for their own benefit and for the advancement of the interests of the community.

H. C. Parker, Treasurer of the South Dakota Retail Hardware Association, made a brief but satisfactory report of the condition of the organization's finances.

The advantages of membership in the Minnesota Retail Hardware Mutual Fire Insurance Company were convincingly set forth in an address by Thomas G. McCracken, Secretary of the Company.

Wednesday afternoon's session was held upstairs in the Coliseum and opened at 2 o'clock with community singing. A practical sales demonstration was given by three members of the assembly for which a prize of a Number 400 Atkins saw was donated, made by E. C. Atkins and Company, Incorporated, Indianapolis, Indiana, to be awarded to the best one in three.

"You and Your Business," was the subject scheduled for treatment by C. T. Woodward of Carlinville, Illinois, former President of the National Retail Hardware Association.

The benefits to be derived from Field Work among dealers were explained by S. R. Miles, Field Service Manager of the National Retail Hardware Association.

Under the clever management of C. T. Woodward of Carlinville, Illinois, the Question Box was made the means for developing many workable ideas regarding the buying and selling of hardware.

At 6 o'clock Wednesday evening the Hardware Exposition was again opened to the general public and an orchestra concert given in the Coliseum.

The same evening at 8 o'clock, a most instructive school for hardware men was held in which practical lessons were afforded in bookkeeping, salesmanship, credit rating, stock selling, and similar subjects.

The first session Thursday, February 26, 1920, was an open meeting at 10 a. m., in which the chief feature was a talk to hardware men by Secretary H. O. Roberts. This was followed by an auction sale of mem-

bers' surplus stock, conducted by W. D. Gordon Company, Auctioneers.

In the afternoon, at 2 p. m., another open meeting was held. E. B. Moon of Chicago, Illinois, in charge of Merchants' Service Bureau of the Orange Judd Publications, delivered an address upon the relations of the retailer to the jobber and the necessity of keeping abreast of the times in all matters which concern the well-being of the community in which the dealer carries on his business.

The Salesmen's Association entertained free, all the dealers and their women folk at 8 p. m., Thursday in the Cataract Hotel.

Friday, February 27, 1920, was occupied with reports of committees and other routine affairs and with visiting the Hardware Exposition in the Coliseum, which closed at 1 o'clock in the afternoon.

The Convention ended with expressions of general satisfaction on the part of the delegates. Greater enthusiasm and a quickening of purposeful ambition were among the most notable results of the annual meeting.

SANITARY SPECIALTIES LISTED IN CATALOGUE CONSTITUTE PROFITABLE LINE.

The sanitary specialties catalogue now being issued by Allan J. Coleman, 200 North Wabash Avenue, Chicago, Illinois, contains illustrations and descriptions of many articles which would be profitable to handle in connection with a hardware stock. Coleman's Improved Suction and Force Pump, which is shown in this catalogue, has many details which are said to be of advantage as compared with other makes of the same article. Two preparations, entirely new, which are declared to be of high quality and to perform their work unusually well are Coleman's Toilet Cleanser and Coleman's Waste Pipe Opener. Though efficient in their action, neither of these chemical preparations have any destructive elements in them. They will do their work without injury to any of the part to which they are applied.

Also listed in the catalogue of sanitary specialties are the following: Coleman's Flexible Coil Wire Closet Cleaner, Coleman's Flexible Coil Wire Sewer and Pipe Augers and Rods, Coleman's Improved Suction and Force Cups, Coleman's Adjustable Window Cleaners, Coleman's Galvanized Iron Window Cleaners and Floor Rubbers, Coleman's Sanitary Brushes, Coleman's Sanitary Fiber Waste Baskets and Hampers, Coleman's Tank Balls, and Coleman's Basin, Bath and Sink Stoppers. Each of the foregoing items is neatly illustrated and thoroughly described in the catalogue. The entire line mentioned is one which is worthy the study of hardware retailers with a view of handling them. To obtain more complete details, hardware merchants should write to Allan J. Coleman, 200 North Wabash Avenue, Chicago, Illinois, and inquire for the sanitary specialties catalogue.

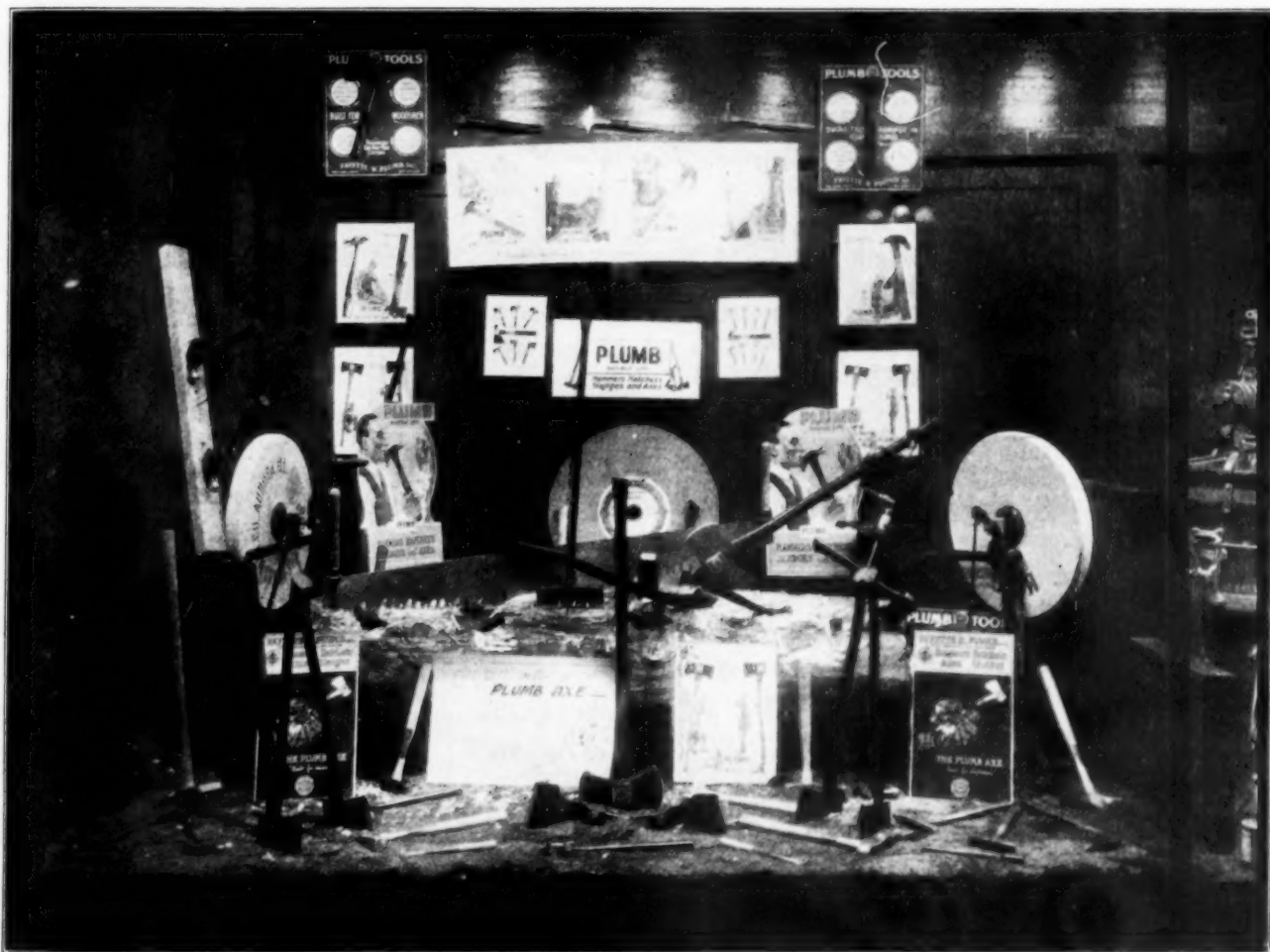
Hardware dealers should never offer an alibi when their business appears to be rather quiet. Instead, they ought to get out and hunt up some new business. That is the only way to ever get ahead.

EXHIBITS IN AMERICAN ARTISAN WINDOW DISPLAY CONTEST

LIFE-LIKE ARRANGEMENT OF TOOLS IS AWARDED THE THIRD CASH PRIZE.

A great Frenchman has said: "The best definition is an example." In other words, an actual showing of a thing in use, best explains it. It is out of the question to think of employing a man to remain in a show window demonstrating the quality of a tool

pany, 810-12-14 Walnut Street, Kansas City, Missouri, which was awarded Third Cash Prize in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. It was the individuality of the arrangement coupled with its highly suggestive features which gained for it the unanimous decision of the judges awarding it the Third Cash Prize. Naturally, it would be expected that a window ar-



Window Display of Axes and Hammers Awarded Third Cash Prize in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. Arranged by Otto J. Gress for the Bunting Hardware Company, 810-12-14 Walnut Street, Kansas City, Missouri.

to passers-by. But an exhibit can be so arranged that the uses of the goods shown can be accurately inferred. For instance, a knife lying idly on an empty platter will not have the force of appeal that the same article would have plunged into a roast fowl. The latter arrangement suggests action. It gives the tool the semblance of actual application. Not only does a window exhibit that suggests action better explain the value of the goods contained in it, but it has more of attractive qualities than would otherwise be obtained.

To point to a specific example, attention is directed to the window display, illustrated herewith, arranged by Otto J. Gress for the Bunting Hardware Com-

paniment in order to win a prize in a contest like the one conducted by AMERICAN ARTISAN AND HARDWARE RECORD must have details above those that would ordinarily arrest the attention of the passer-by. However, this does not exclude its added practical value. A window display of this type will do more than attract attention. It will demand study, and if the need for a tool similar to the ones exhibited exists with the observer, he will be persuaded to buy.

A study of the life-like arrangement of the tools in the window display shown in the accompanying illustration will be a lesson in advantageous arrangement of articles for the purpose of gaining attention. The log in the center of the window has been chopped

or sawed by the particular tool which rests in it. Thereby the axes and saws suggest more than mere sharpness of edge, they portray their actual cutting ability. The entire exhibit has a naturalness which is a help in studying the tools displayed. The placing of the two grindstones in the window, one at each end, is a point of cleverness that should not be overlooked by any one who desires to avail himself of the best in window arrangement. Cards describing the articles shown are sparingly used. As can be seen, the trade-mark of the manufacturer is prominently evident.

Besides the log used in this window arrangement, very little paraphernalia was required. In fact, most of the labor in connection with this exhibit was mental. The floor is sprinkled with earth to add to the naturalness of the display. No fancy decorations are used in back or upon the tools shown. The articles were placed where it was thought they would best arrest attention and explain the nature of their usefulness. And it is the use-value of a commodity which is the prime requisite. Men or women buy goods because of uses they can be put to. Hence displaying this part of an article is showing its most salable qualities, and incidentally is the means of selling it.

EXPLAINS PRINCIPLES WHICH FORMED THE BASIS OF WINDOW DISPLAY AWARDED THIRD CASH PRIZE.

What often determines the store in which a prospective purchaser will buy an article, when there are two possible sources of purchase, is a good window display. In fact, where equality is to be found in all other things in two similar businesses in a neighborhood, the point of difference or of superiority is emphasized by the distinctiveness of the window arrangements. A clever point illustrating this was mentioned by Mathias Ludlow, vice-president of the National Retail Hardware Association, in his speech, "The New Order," delivered before the Convention of the Illinois Retail Hardware Association, Hotel Sherman, Chicago, Illinois, February 18, 1920, and which was reported in full in the February 21, 1920, issue of AMERICAN ARTISAN AND HARDWARE RECORD. Herewith is appended Mr. Ludlow's remarks, pointing out the value of a carefully arranged window display:

"I know of two five-and-ten-cent stores so close together that the phonograph pieces in one store disturb the song demonstrator in the other. One does twice the business that the other one does, because there is live, attractive atmosphere and real service in the one while the other lacks those things. The successful one has a window dresser who displays goods while the other has a window full of things that look as though they were put in with a pitchfork.

"The manager of the successful one belongs to the principal organizations of the city, takes an interest in community work and studies his field. The other manager belongs to nothing and is interested only in holding his job."

That Otto J. Gress, who was awarded Third Cash Prize in AMERICAN ARTISAN AND HARDWARE RECORD

Window Display Competition, is aware of the general fact expressed by Mr. Ludlow is shown by his statement that he considers window displays the best salesmen in a store. However, in order to conform with this standard the window trimmer must study the best practices of window arrangements. Enlightening in the direction of the methods used by men who have made window displays that have gained commendation is the letter of Mr. Gress explaining the principles which governed him in making the window display which was awarded Third Cash Prize. We attach his letter herewith:

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Your check for \$15.00 received as third prize in your Window Display Competition. Accept my sincere thanks for same, and I assure you it was greatly appreciated.

In regard to window trimmings: I find, in order to attract and hold the public's attention, one must not only display merchandise, but occasionally put in a trim out of the ordinary, for it is the unusual that will attract.

Our tool window with the log, showing actual tests, was the most convincing, while the mere displaying of quantities of axes, hatchets, hammers, etc., would not have meant a thing to most people. In connection with the display in the window we had a log in the store, where the skeptics might try the tools for themselves.

We must admit that our display windows are our best salesmen, we cannot afford to neglect them.

Again thanking you for the kind reward, I am,
Very truly yours,

OTTO J. GRESS.

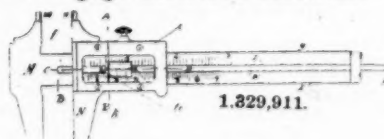
Kansas City, Missouri, February 12, 1920.

PURCHASES MACHINERY AND PATENTS.

E. A. Foy and Company, Cincinnati, Ohio, has purchased the machinery and patents of Reyburn and Hunter, manufacturers of lightning rods, Philadelphia, Pennsylvania. The entire equipment will be moved from Philadelphia to Cincinnati, Ohio, where they will be refitted expressly to meet the requirements of the E. A. Foy and Company. This company is now in a position to meet all needs for lightning rods promptly.

PROCURES PATENT FOR A GAGE.

United States patent rights have been granted to Mario Lenti, Milan, Italy, under number 1,329,911, for a gage described herewith:



A gage for thickness and depth measurements comprising a graduated bar, a cross-head integral therewith, said bar having a longitudinal slot extending to one end thereof, a cross-head slidably mounted on said bar, a vernier carried by the slidable cross-head, means for adjusting said vernier in position with respect to said slidable cross-head, and a rod secured to said slidable cross-head and slidably mounted in said slot.

GARAGE DOOR HARDWARE IS SHOWN IN ILLUSTRATED CATALOGUE.

In the illustration herewith is shown a copy of the catalogue now being issued by the Richards-Wilcox Manufacturing Company, Aurora, Illinois, entitled: "Distinctive Garage Door Hardware." The details of this booklet were worked out with painstaking care in order to present in a concrete and at the same time complete manner, the hundreds of sets of equipment made by the Richards-Wilcox Manufacturing Company for use on garage doorways of every kind. In this catalogue, any one who requires the products made by this company, can readily locate all the information needed regarding suitable garage door hardware for any conceivable doorway.

The body of the catalogue is printed on heavy white enameled paper in two colors, and each set of hard-



"Distinctive Garage Door Hardware," Catalogue of the Richards-Wilcox Manufacturing Company, Aurora, Illinois.

ware contained in it is illustrated showing actual installations. Also, elevation and plan diagrams showing operation of doors and application of hardware parts are clearly set forth. The cover design shows a reproduction of an actual installation of "Slidetite" Door Hardware in natural colors. The picture is true to life—even to the little birdhouse nestled among the trees seen between the two automobiles which stand in the driveway. A copy of "Distinctive Garage Door Hardware" will be mailed to any one interested in these products who addresses a request for Catalogue A-22 to the Richards-Wilcox Manufacturing Company, Aurora, Illinois.

DECLARES THAT AMERICAN ARTISAN IS INDISPENSABLE.

TO AMERICAN ARTISAN AND HARDWARE RECORD:

Please renew my subscription to your journal. I can not keep house without it, for the business helps of a single issue are worth a hundred times the price of the year's subscription.

F. H. GOOD.

Burt, Iowa, February 24, 1920.

OBITUARY.

William G. Hibbard, Jr.

Noted not only for his prominence in the hardware trade but respected and esteemed among his associates for his activity in the field of charity was William G. Hibbard, Jr., of the firm of Hibbard, Spencer, Bartlett and Company, Chicago, Illinois, who passed away February 20, 1920, at the Presbyterian hospital in New York City.

He was born in Chicago, Illinois, March 30, 1870, and was a son of the late William G. Hibbard, founder of Hibbard, Spencer, Bartlett and Company. He was graduated from Harvard College in 1892. Until the fall of 1918 he was treasurer of Hibbard, Spencer, Bartlett and Company, when he resigned to go to France in the service of the Y. M. C. A.

For many years he was a trustee of St. Luke's Hospital, Chicago, and of the Chicago Foundlings' Home. He was a director of the Chicago Trust Company.

He is survived by his widow, Susan Follansbee Hibbard; his mother, Mrs. Lydia B. Hibbard; his sisters, Mrs. Robert B. Gregory, Mrs. John Buckingham and Mrs. William E. Casselberry, and his brother, Frank Hibbard.

PRESENTED BY BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The Bureau of Foreign and Domestic Commerce, through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

32025.—A firm in Switzerland desires to purchase and secure an agency for tools, iron, steel, motor cars, tractors, etc. Quotations should be given f. o. b. American port or c. i. f. European port. Correspondence may be in English. References.

32028.—A company in India desires to secure an agency and purchase hardware, paints, varnishes, and allied lines. Quotations should be given c. i. f. port of India. Payment through draft on bank in India. Reference.

32035.—Catalogues are desired by a man in New Zealand of light power-driven saws for felling trees.

32042.—A commercial agent from Bulgaria is in the United States for the purpose of making business connections with manufacturers only, with a view to securing an agency and purchase 200 tons of wire nails, 200 tons of tinplate, etc. References.

32044.—A merchant in India desires to secure an agency and purchase hardware, bicycles, motor cycles and accessories, motor accessories, tubes and tires, and lamps of all kinds. Quotations should be given f. o. b. Bombay. Payment through bank in Bombay. Reference.

32050.—An agency is desired by a man in France for the sale of motor tires and tubes, and all articles for the automobile and pneumatic trade. Quotations should be given c. i. f. Bordeaux. Correspondence may be in English. References.

32051.—An American corporation is soon to send a representative to central Europe and desires to make connections with manufacturers who wish representation on the Continent for the sale of all lines of merchandise. References.

32054.—A merchant firm in India desires to purchase and secure agencies for metals, metalwares, etc. Quotations should be given c. i. f. port of India. Payment, cash against documents or by arrangement. Reference.

32059.—A commercial agent in South Africa desires to secure an agency for the sale of aluminum kitchen ware. Reference.

32060.—The president of a commercial organization in Bulgaria desires to purchase and secure an agency for building materials of all sorts, iron and steel nails, screws, and agricultural implements and machinery of all sorts, including tractors. Correspondence may be in English. Reference.

32061.—A merchant with a warehouse in Mexico and a force of salesmen to cover that country desires to secure an agency from a manufacturer for the sale of trunk hardware. Correspondence may be in English. Reference.

32065.—An agency is desired by a commercial agent in South Africa for the sale of hardware, aluminum ware, tools, etc. Reference.

32068.—A commission merchant firm in France desires to secure agencies from manufacturers for the sale in France and Belgium of all articles of manufacture. Correspondence may be in English.

32071.—Contractors for supplies for Government departments, and manufacturers' representatives in Egypt desire to enter into business relations with manufacturers on a commission basis, to purchase and also secure agencies for the sale of general hardware, sanitary appliances, household utensils, bicycles and motorcycles, dry and oil paints, etc. Payment by letter of credit in American bank, against documents. References.

32077.—An agency is desired by a commission agent in France for the sale of any kind of goods which will find a market in that country. Quotations should be given c. i. f. port in France. Terms, credit if possible. Reference.

32086.—A merchant in Italy desires to secure an agency and purchase bicycle accessories and spare parts and tires for automobiles and bicycles. Quotations should be given c. i. f. Italian port. Correspondence may be in English. Reference.

32091.—General commission agents in India desire to communicate with manufacturers of hardware, etc., with a view to representing them in that country. References.

32096.—An agency is desired by a man in New Zealand for the sale of wire nails, nail wire, galvanized plain and barbed wire, plain and galvanized corrugated iron, malleable pipe fittings, galvanized and black pipe, and galvanized slice cut staples. Quotations should be given c. i. f. main ports of New Zealand. Payment by sight draft against documents. References.

32108.—A commercial agent in France desires to purchase and secure an agency for modern heating apparatus. Quotations should be given c. i. f. French port. Correspondence may be in English. Reference.

COMING CONVENTIONS.

Michigan Sheet Metal Contractors' Association, Saginaw, Michigan, March 2, 3, and 4, 1920. F. E. Ederle, Secretary, Grand Rapids, Michigan.

Master Sheet Metal Contractors' Association of Wisconsin, Milwaukee, Wisconsin, March 17, 1920. Paul L. Bierbach, Secretary, 661 Hubbard Street, Milwaukee, Wisconsin.

Illinois Sheet Metal Contractors' Association, Bloomington, Illinois, April 14 and 15, 1920. Frank I. Eynatten, Secretary, Peoria, Illinois.

National Warm Air Heating and Ventilating Association, Cleveland Hotel, Cleveland, Ohio, April 21, 1920. Allen Williams, Secretary, Columbia Building, Columbus, Ohio.

Southeastern Retail Hardware and Implement Association, embracing Alabama, Florida, Tennessee and Georgia State Retail Hardware Associations, Atlanta, Georgia, May 4, 5, 6, and 7, 1920. Walter Harlan, Secretary, 701 Grand Theater Building, Atlanta, Georgia.

Stove Founders' National Defense Association, Boston, Massachusetts, May 11, 1920. R. W. Sloan, Secretary, 826 Connell Building, Scranton, Pennsylvania.

Hardware Association of the Carolinas, Imperial Hotel, Greenville, South Carolina, May 11, 12, 13, and 14, 1920. T. W. Dixon, Secretary, Charlotte, North Carolina.

Southern Hardware Jobbers' Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, May 11, 12, 13, and 14, 1920. John Donnan, Secretary, Richmond, Virginia.

American Hardware Manufacturers' Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, May 11, 12, 13, and 14, 1920. F. D. Mitchell, Secretary, 4106 Woolworth Building, New York City.

Old Guard Southern Hardware Salesmen's Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, May 12, 1920. R. P. Boyd, Secretary, Knoxville, Tennessee.

National Association of Stove Manufacturers, Boston, Massachusetts, May 12 and 13, 1920. Robert S. Wood, Secretary, National State Bank Building, Troy, New York.

National Association of Sheet Metal Contractors, Peoria, Illinois, June 8, 9 and 10, 1920. Edwin L. Seabrook, Secretary, 261 South Fourth Street, Philadelphia, Pennsylvania.

Ohio State Sheet Contractors' Association, Toledo, Ohio, July 20, 21, and 22, 1920.

Illinois Retail Hardware Association, Hotel Sherman, Chi-

cago, Illinois, February 15, 16 and 17, 1921. Leon D. Nish, Secretary, Elgin, Illinois.

RETAIL HARDWARE DOINGS.

Arkansas.

The Sparkman Hardware Company at Sparkman has been bought by Robert Graham and associates.

S. Roberts has sold a half interest in the Roberts Hardware Company at Arlington to a Mr. Parks.

Kansas.

The Charles Andre hardware business at Barnes has been succeeded by The Marlor Hardware Company.

Michigan.

Warren J. Dodge and Dwight William have purchased a hardware business at South Haven.

Minnesota.

Gullander and Nelson have dissolved partnership in their hardware business at Hallock. Mr. Gullander continues in the business.

Helberg and Lovestrand will open a hardware business at Lindstrom.

C. H. Cooley has sold an interest in his hardware store at Madelia to A. M. Bradsbury.

E. A. Saur has sold his interest in the hardware business of Saur and Aiken, 2409 Central Avenue, Minneapolis, to E. C. Aiken.

J. B. Schons has bought a half interest in the F. Johannes hardware business at Nicollet.

Montana.

George Evands and Company at Beaver Crossing have been succeeded in the hardware business by G. A. Evans and Son.

Missouri.

Miller and Babbs have sold their hardware business at Stockton to W. C. Davis and Claud Fillpot.

Arthur Craig, junior member of the Cox-Craig Hardware Company at St. James, has purchased the interest of Mr. Cox recently, but the firm's name will remain unchanged.

Nebraska.

Manke Brothers have sold their hardware store at Bloomfield to E. E. Salmon.

Edward and Evans have sold their hardware business at Shugert to Earl Wright.

North Dakota.

A. Knutson and C. J. Rowe have bought a hardware store at Hamilton.

Green Brothers and Jones have purchased the Rutland Hardware Store at Rutland.

Ohio.

The Fruit Hardware Company at Fostoria has increased its capital from \$15,000 to \$50,000.

The Bidenour and Johnson Hardware Company has been incorporated with \$20,000 capital, by W. Ridenour, H. Johnson, M. E. Ridenour and M. B. Johnson.

The Patrick Hardware Company has been incorporated at Sunbury with a capital stock of \$25,000, by Winon Stanforth, P. S. Stanforth, Fannie Cupp, D. M. Cupp, and T. B. Perfect.

Oklahoma.

The Prichard Hardware Company at Bevol will erect a new building and enlarge its stock.

The McNabb Hardware Company at Henryetta has been sold to Bailey Brothers.

Smith and Brown have been succeeded in the hardware business at Snyder by the Peoples Hardware Company.

The Land and Kinser hardware business at Cherokee has been sold to G. M. Mell and H. S. Henley.

Louis and Kinser have sold their hardware business at Cherokee to Mell and Henry.

The Frederick Hardware Company at Grandfield has been succeeded by W. A. Fuqua.

E. S. Magruder has sold his hardware store at Muldrow to D. M. Patton.

South Dakota.

Jensen Brothers have sold their hardware business to J. Benson.

Washington.

D. C. Gibbs and Earl James have purchased the Pasco Hardware Company at Pasco.

Wisconsin.

Henry G. Groth has sold his entire hardware stock at Cedarburg to his sons who will continue under the firm name of Groth Brothers Hardware Company.

William M. Schwager has sold his hardware store at Hartland to Edwin M. Fuller.

Henry Ramthun is building an addition to his hardware business at Kewaskum.

G. A. Loescher and Son will remodel and build an addition to their hardware store at Menasha.

The Moore Thompson Hardware Company at Washburn has filed notice of dissolution.

ADVERTISING CRITICISM AND COMMENT

Helpful Hints for the Advertisement Writer

Unity in advertising copy is forceful. In copy of this kind there is not a number of commodities which tends to confuse the reader. If he reads the advertisement he concentrates his mind on one thing. Illustrative of unity in presentation is the advertisement of the Poe Hardware and Supply Company, Greenville, South Carolina, which is reproduced herewith from *The Greenville Daily News*, Greenville, South Carolina. When the reader finishes perusing this advertisement he knows that the Poe Hardware and Supply Company sells skates. Nor are there too many words used in telling this fact. A generous amount of white space gives the lay-out prominence on a closely printed page. The illustration on the top of the lay-out with the word "skates" in bold-face type underneath it will arrest the attention of all who are



SKATES

For your child's sake, buy a pair.
They make rosy cheeks and bring good health.

Buy a "Skypalong" for the small tot.

Phone 14 **POE** Phone 15
HARDWARE & SUPPLY CO
212 South Main Street.

in any way at all interested in skates. Arguing that the purchase of a pair of skates will aid the child in getting rosy cheeks and good health, shows the creative power of the advertiser.

* * *

The word *hardware* is a general term. To the average person there is no difference between the hardware sold by one dealer and that sold by another. It is not until the fact that there is a distinction in the material and formation of tools handled by various dealers is brought to the attention of the average man that he realizes the truth. When Weiss and Company, Freeport, Illinois, declares that their hardware

"stands the test" in their advertisement which is reproduced in the accompanying illustration from *The Freeport Journal-Standard*, Freeport, Illinois, they endeavor to show that there exists a great difference in hardware. The illustration used for the purpose of



WE HAVE BEEN IN THE HARDWARE BUSINESS A LONG TIME AND KNOW WHICH BRANDS ARE GOOD—THESE ARE THE BRANDS WE SELL.

WE DON'T WANT TO SELL YOU JUST ONCE. WE WANT ALL OF YOUR HARDWARE TRADE FOR ALL TIME. WE WILL GET IT IF YOU ONLY BEGIN TO DO BUSINESS WITH US BECAUSE

OUR HARDWARE IS THE BEST: IT STANDS THE TEST.

WEISS & CO.

arresting the attention of the reader is neat and to the point. The spare use of type and the piquancy of the statements are forceful. Weiss and Company show their advertising ability by frequently changing the form of their copy. Each of their advertisements which have appeared in *The Freeport Journal-Standard* is attractive. This company by constantly advertising shows its knowledge of the fact that advertising is one thing the quitter should leave alone.

* * *

NEEDS GOOD MANAGEMENT.

Advertising is not merely a matter of spreading your business name far and wide. More money is wasted in misdirected publicity than in any other business venture. Yet, no better means of building business is known.

Don't take a chance in advertising. Make a sure thing of it. Study good advertising. Be systematic. Give personal attention to advertising campaigns. Your efforts will, then, be fruitful.

HEATING AND VENTILATING

REPORTS PROGRESS IN WARM AIR HEATING INVESTIGATIONS AT UNIVERSITY OF ILLINOIS.

Further progress in the investigations of warm air heating systems conducted under a cooperative agreement between the National Warm Air Heating and Ventilating Association and the University of Illinois was reported at the Twenty-sixth Annual Meeting of the American Society of Heating and Ventilating Engineers, which was held January 27, 28, and 29, 1920, in the Engineering Societies Building, New York City. In the Warm Air Heater Special issue of AMERICAN ARTISAN AND HARDWARE RECORD, published December 6, 1919, appeared exhaustive accounts of the research work being carried on in the University of Illinois under the supervision of A. C. Willard, Professor of Heating and Ventilation, in connection with warm air heating systems. Professor Willard wrote an article pertaining to the investigations for the Warm Air Heater Special. Herewith is given the developments which have resulted since that time:

The present testing equipment consists of the following:

(1) *Main Plant.* This plant (Figs. 1 and 2) consists of a complete recirculating gravity furnace system with typical leaders, stacks, and registers which are carried by a three story steel structure serving as the working skeleton of a house. The stacks are cased in to simulate furred wall conditions, and one of the four stacks to second floor as well as one of the two stacks to third floor is of single wall pipe. All other stacks are double wall with 5/16 inch air space. The recirculating duct takes air from the laboratory at about 70 degrees Fahrenheit as the heating effect of the furnace is not appreciable in its effect on the temperature in the large laboratory in which the furnace plant is erected.

(2) *Auxiliary Plant.* A special single leader plant has also been set up with a 48 inch casing, heavily insulated, which is heated by a series of high pressure steam coils.

(3) *Calibrating Plant for Register Faces.* A separate calibrating plant for determining the true amount of air discharged at each register face on the main plant at the temperature used during any given test was erected at the same time as the main plant. A Pitot tube and piezometer ring in a 5 inch round section and special gage are used as standard for this calibration.

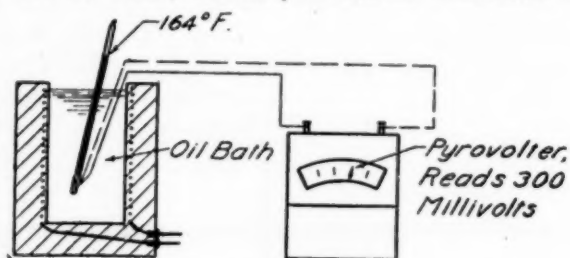
(4) *Calibrating Plant for Recirculating Inlet.* This plant is similar to but operates on room air which is drawn through a return air opening duplicating the inlet opening on the furnace plant proper, and is used to get the true amount of air entering the furnace for

any given test conditions. Pitot tube and piezometer

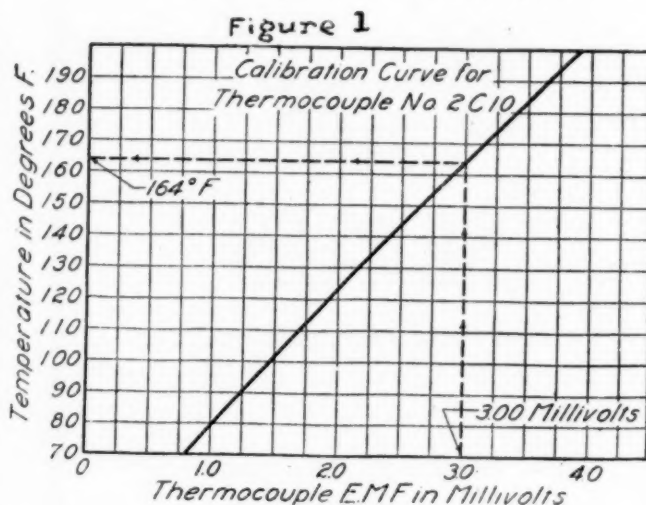
(5) *Heat Transmission Plant.* There has recently been erected a very simple equipment for studying the relative heat transmission of covered and uncovered tinned, galvanized and painted leader pipes.

Results of Tests On Auxiliary Plant.

Evaporative Capacity Tests of Water Pans. The evaporative capacity of water pans as used in furnace installation has been made the subject of special study by W. E. Pratt, formerly Research Associate, and



Calibration of Thermocouple



some of the data obtained are submitted below, as these tests were also run on the main plant. The results apply to the three common types of pans, all of which were run successively in the furnace when operating as a complete system (Fig. 1).

It will be noted that the dome pan is by far the most effective per square inch of surface, and that its total evaporation is greater than the crescent shaped pan around the fire pot up to the maximum temperatures used. The limited evaporation which takes place from the regular type of pan is too little to produce any appreciable effect, as is very well known to anyone who has ever attempted to determine the effect of such pans on the humidity of a heated house.

Special Problems Encountered.

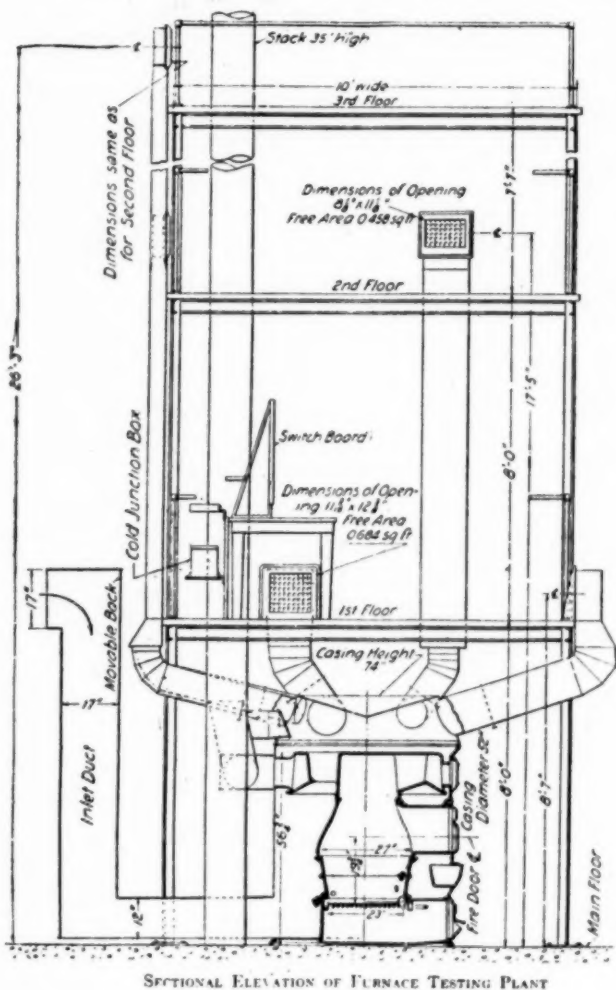
Temperature Variation Across an Air Stream. There is still another aspect to this measurement of the temperature of a flowing stream of air which has been given a great deal of study by V. S. Day, research assistant. It is a well known fact that there

is a great variation in temperature across any section of an air stream whether the air current is flowing in a nearly horizontal leader or in a vertical stack. The exact location of the thermocouple in such a stream is a matter of vital importance, especially if this read-

temperatures also fall off rapidly to 130 degrees Fahrenheit at a distance 0.01 in. inside of bottom of pipe, while the metal surface here is at a temperature of 116 degrees Fahrenheit. The temperature curve for the asbestos covered pipe is similar, but while its maximum is 178 degrees Fahrenheit at 2 inch below top of pipe or 3.5 degrees Fahrenheit less than in a bright tin leader at the same position, the metal surface at top and bottom of leader is nearly 9 degrees Fahrenheit less at the top and 6 degrees Fahrenheit less at the bottom than the metal surface of the uncovered leader. The asbestos paper covered pipe is losing heat more rapidly than the bright tin leader pipe.

It therefore becomes a nice question to determine the heat content of the air at any given section and compare it with the heat content at some other section. This problem is still further complicated by the fact that a velocity traverse at this same section with a Pitot tube and micromanometer shows a somewhat similar variation in uniformity of flow across the section. The true mass temperature is then the summation of the products of the weights of air at each concentric equal area (a, b, c, d and e) by the mean temperature at that concentric area divided by the total weight of air flowing.

So long as the temperature traverse curve at one section has the same shape as at another section, and the velocity traverse curves are similar to each other,



SECTIONAL ELEVATION OF FURNACE TESTING PLANT

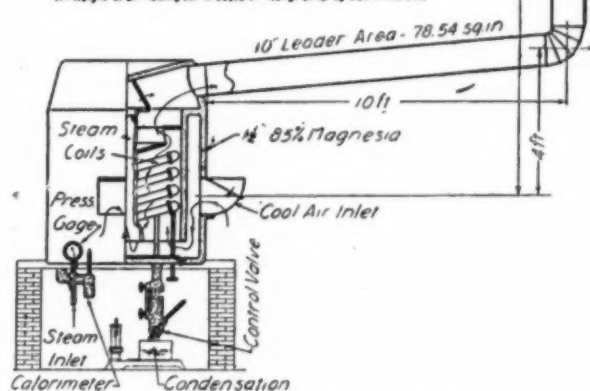
ing is to be compared with another reading further along the stack or leader. As a preliminary study with rather crude apparatus showed a surprising variation in an ordinary leader, it was decided to go into the matter more thoroughly and a special temperature searching tube under micrometer control was developed and put into operation with great success. A few sample curves are submitted which speak for themselves. Both temperature traverses were made in the same 10 inch pipe just 5 feet from bonnet on the auxiliary plant and at the same section taken along a vertical diameter. The bonnet and room temperatures were the same in both cases, and hence the curves are a direct index of the increased heat and air carrying capacity of a bright tin leader pipe as compared with the same pipe covered with one layer of asbestos paper, weighing 10 pounds to the 100 square feet.

From an inspection of the curves it is apparent that in the case of the bright tin leader, the maximum air temperature at the section is 181.5 degrees Fahrenheit at a point 2 inches below top of pipe. These temperatures fall off rapidly to 154 degrees Fahrenheit at a distance 0.01 inch inside of top of pipe, while the temperature of the metal surface itself (by thermocouple soldered to outside of leader) is 132 degrees Fahrenheit. Below the center of the pipe the air tem-

RESULTS OF TESTS ON AUXILIARY PLANT WITH UNCOVERED 10" LEADER AND 10" STACK

More length of leader 10'-0" and height of stack 18'-0"

Time	Temp. at top of leader	Temp. at bottom of leader	Temp. at top of stack	Temp. at bottom of stack	Temp. at top of boiler	Temp. at bottom of boiler	Temp. at top of condenser	Temp. at bottom of condenser	Temp. at top of calorimeter	Temp. at bottom of calorimeter	Temp. at top of control valve	Temp. at bottom of control valve
10:00	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
10:10	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
10:20	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
10:30	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
10:40	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
10:50	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:00	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:10	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:20	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:30	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:40	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
11:50	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0
12:00	181.5	154.0	132.0	116.0	178.0	154.0	132.0	116.0	178.0	154.0	132.0	116.0



SECTIONAL VIEW AND CHART OF FURNACE TESTING PLANT.

differences in temperature and heat content are quite correctly obtained if the thermocouples are located at similar points as indicated by the temperature curves at the two sections.

Heat Loss from Covered and Uncovered Leaders.

Reference has already been made to the fact that covering a bright tin leader with a single layer of asbestos paper apparently increases the heat loss from the leader. This appears to be due to the higher coefficient of radiation of asbestos paper as compared with a polished metal surface, and also to the increased surface area of the asbestos covering. This at once brings up the special problem of relative values of insulation methods in this particular field where thin bright tin pipe are used. In order to secure some corroborative data along this line, a special heat transmission plant supplied with low-pressure steam has been set up by Mr. Day and a few of the more interesting results are given in Table 4. In each case, a number of duplicate runs of at least 10 hours' dura-

of leader for conditions shown in curves give values of 1.34 British thermal units for bare tin and 2.36 British thermal units for asbestos covered tin, similar to conditions No. 1 and No. 2, respectively, in Table 4.

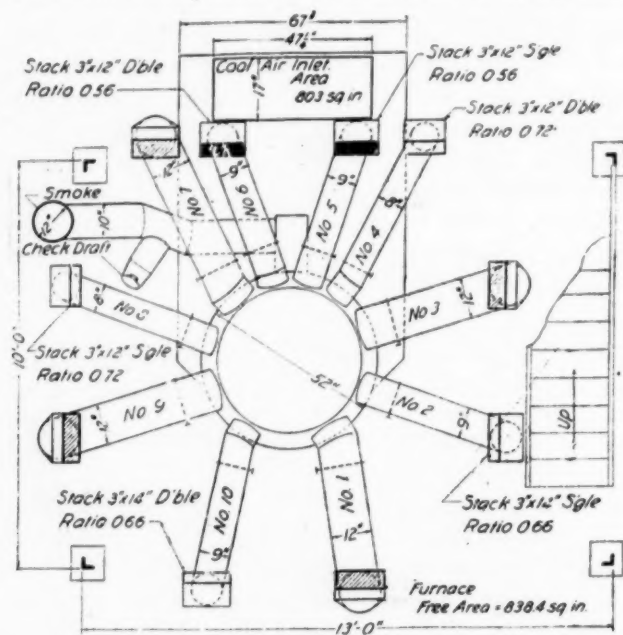
The Problem of Air Velocity Measurement. There are two possible methods of determining the amount of air actually flowing in through the inlet and out through the leaders and stacks of a warm air furnace heating plant.

The first, and most obvious method, would be to attempt to measure the velocities directly, using a Pitot tube and a sensitive gage. This has been attempted and a very sensitive and accurate gage reading to 0.0001 inch of alcohol, has been developed by F. G. Wahlen, research graduate assistant. When it is remembered that the actual velocities range from as low as 2 feet to a maximum of seldom over 5 feet per second in these systems, it will be apparent that no ordinary differential gage will be of the least value in making direct measurements. Moreover, since a painstaking traverse is always necessary, the above scheme fails absolutely when applied to an extensive plant where many readings must be taken simultaneously. It is, however, of great value in studying single leader and stack systems.

The second method which may be used is to employ a simple "field" instrument which may be used quickly, is simple in construction and easily replaced. Such an instrument must, of course, be accurately calibrated and frequently checked; and as already indicated, this is the method which has been in use in this investigation from the start. It is the unanimous opinion of the men on the staff that this method is the only workable one, and that its only limitation is the inaccuracy of the Pitot tube or orifice used in its calibration. Reference to Table 3 will show the practical results obtainable with this scheme of measurement, using calibrated anemometers, run against Pitot tubes and the Wahlen gage. This gage was found absolutely essential in this calibration work. In test 1-A, the weight of air entering inlet per minute was 60.15 pounds and the sum of the weights of air leaving ten outlet register faces in the same time was 59.75 pounds, or a discrepancy of 0.65 per cent. In test A-4 the results are not as good, since the weights in and out fail to check by $64.31 - 60.30 = 4.01$ pounds or a discrepancy of 6.6 per cent. This discrepancy can be cut down one-half by assuming the true weight is the mean of the inlet and outlet weights. We have not only done this, but are going to make a painstaking attempt to get still greater accuracy in the calibration of our anemometers. In other words, we are going to attempt to make a fundamental measurement of air that is more accurate than can be made by either Pitot tube or orifice, which methods we have found do not check each other when placed in the same line by from 5 to 10 per cent. It is quite out of place, however, to discuss this new scheme here.

Significant Conclusions.

1. The successful testing of a warm air furnace is so tied up with the testing of the furnace heating system as a whole, that to attempt to test the furnace without the plant is of little or no value, if rating or



	Leaders			Stacks		Registers	
	No	Size	Area	Dimensions	Type	Dimensions	Free Area
1st Floor	1	12 in	113 sq in		Asbestos Covered	11 1/2 in x 12 1/4 in	0.684 sq ft
	3	12 in	113 sq in			"	"
	7	12 in	113 sq in			"	"
	9	12 in	113 sq in			"	"
2nd Floor	2	9 in	64 sq in	3 in x 14 in	Sgle	8 1/2 in x 11 1/4 in	0.458 sq ft
	4	8 in	50 sq in	3 in x 12 in	Dble	"	"
	8	8 in	50 sq in	3 in x 12 in	Sgle	"	"
	10	9 in	64 sq in	3 in x 14 in	Dble	"	"
3rd Floor	5	9 in	64 sq in	3 in x 12 in	Sgle	"	"
	6	9 in	64 sq in	3 in x 12 in	Dble	"	"
Leader Area: 1st Fl 452 sq in, 2nd 228 sq in, 3rd 128 sq in. Total 808 sq in							
Percent Leader Area: 1st Fl 55.9, 2nd 28.2, 3rd 15.8							

FLOOR PLAN AND DIMENSION TABLE FOR FURNACE TESTING PLANT

tion have been made. In all tests reported the drums are of the same size and show no appreciable collection of air, as the outlet thermometers at end of test always check with the steam temperatures within a degree or two. Five drums are run at one time and No. 1 drum is always run as a control.

An attempt has been made to connect the data tabulated in Table 4 with the temperature loss found to occur in the case of the air flowing in the 10 inch leader for which the temperature traverse curves have been given. If we assume this loss in temperature is equivalent to the heat given off from the surface of the leader, which of course is undoubtedly true, we can calculate coefficients of emissivity for the bright tin and also for the asbestos-covered tin, using metal surface temperatures as read by thermocouples. These calculated coefficients based on a 10 foot run

capacity data as well as thermal efficiency and economic performance data are desired.

2. No furnace testing data have any real value until the investigator can demonstrate that his methods of air measurement are fundamentally correct, and that the weight of air entering the furnace measured at the inlet temperature is equal to the aggregate weight of air leaving the furnace measured at the various outlet temperatures.

3. Warm-air furnace testing also involves unusually complete and accurate methods for measuring air temperatures, where radiation and stream line effects must always be corrected for in getting this temperature data. Most absurd results may be obtained if this is not done.

4. Furnace test procedure as to method of handling the fire and computation of results is of secondary importance and should be worked out to accord as nearly as possible with the steam heating boiler code.

5. A warm-air furnace test is a question of true air-velocity and true air-temperature measurement and nothing else, as all other problems become insignificant when compared with these two. ring in a 10 inch round section and special gage are used as standard in this calibration.

SIMPLIFIES WARM AIR HEATER INSTALLATION JOBS.

It is in the intricate details of warm air heater installation that dealers make the most mistakes in putting a heater in a dwelling. However, by the aid of



Lamneck Frictionless Angle Boot, Made by The W. E. Lamneck Company, Columbus, Ohio.

Lamneck Simplified Fittings, manufactured by The W. E. Lamneck Company, Columbus, Ohio, it is said the difficulties attendant upon warm air heater installation are overcome. At the same time, the firmness of the entire heating system is added to because of the durable construction of these fittings. The sheet metal used in the making of Lamneck Simplified Fittings is of a high grade. In all details of manufacture, care is taken to insure proper formation of the products. When finished, the fittings are examined to insure their quality.

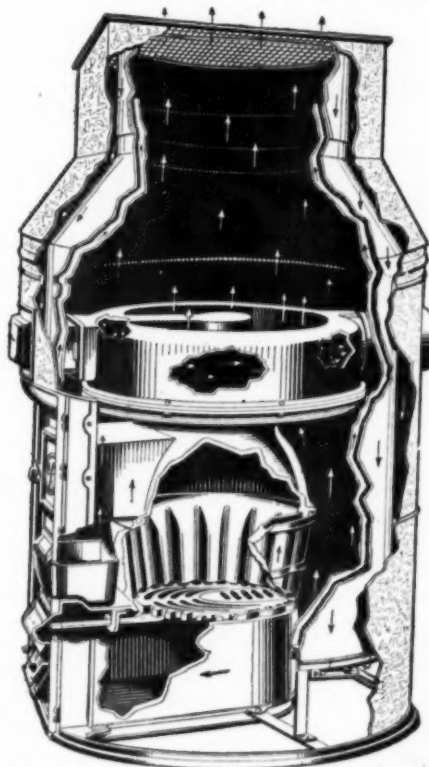
In the accompanying illustration is shown an example of the grade of warm air heater fittings manufactured by The W. E. Lamneck Company. This Lamneck Frictionless Angle Boot, is formed throughout so that when it is installed it will give efficient

service. Notice the locking device. Though simple in detail, it will hold tightly when once joined. No amount of wear will loosen it. The hemmed collar, a feature that appears on all boots made by The W. E. Lamneck Company fits snugly when attached. In all, this frictionless angle boot, is made for the purpose of simplifying warm air heater installation, as are all the warm air heater supplies made by The W. E. Lamneck Company.

A complete line of such supplies as, Pecora Asbestos Cement, asbestos paper, dampers, Tuttle and Bailey registers, and other necessary requirements for warm air heater installation, are always carried in stock. Prompt shipments are made. It will be to the interest of the dealer if he write to The W. E. Lamneck Company, Columbus, Ohio, and inquire for its catalogue which describes the entire line of Lamneck Simplified Fittings and the warm air heater supplies carried by that company. A complete stock of Lamneck Pipe and Fittings is carried in Chicago by the Central Heating Supply Company, 31 West Lake Street.

PIPELESS WARM AIR HEATERS MAKE PROFITABLE LINE FOR DEALERS.

That pipeless warm air heaters have proved a profitable line of products to handle is attested to by many dealers in all parts of the country. More and more this type of heating plant is gaining its rightful position in the trade. Its true values are being acknowl-



Globe Pipeless Warm Air Heater, Made by the Globe Stove and Range Company, Kokomo, Indiana.

edged and appreciated. Manufacturers who make pipeless warm air heaters give strict attention to their continual betterment. Noticeable among these is The Globe Stove and Range Company, Kokomo, Indiana, manufacturers of the Globe Pipeless Warm Air Heater, illustrated here-with. This company coöperates with the dealer in every essential detail touching upon the sale and installation of the warm air heaters which it manufactures. By educational advertising in towns in which there are dealers handling the Globe Pipeless Warm Air Heater, the manufacturers assist in recruiting prospective purchasers.

Depicted herewith is the Globe Pipeless Warm Air Heater. In construction this warm air heater is designed to extract as much heat from the amount of

edged and appreciated. Manufacturers who make pipeless warm air heaters give strict attention to their continual betterment. Noticeable among these is The Globe Stove and Range Company, Kokomo, Indiana, manufacturers of the Globe Pipeless Warm Air Heater, illustrated here-with. This company coöperates with the dealer in every essential detail touching upon

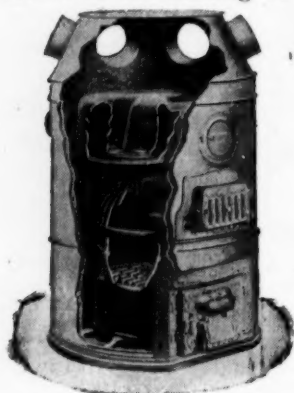
fuel used as human ingenuity has thus far provided means for, declare the manufacturers. A double wall with a circulating air flue provides a perfect "air insulator." This arrangement allows the cold air to drop downward undisturbed. Thereby the convection of the air is stimulated, and the circulation of both the cold and warm air is invigorated, insuring an even and continual distribution of heat. The combustion chamber is said to be unusually large and is designed to consume the coal gases arising from the fuel. All the cast iron parts are heavy and strongly built. The various chambers—ash pit, fire pot, feed door, etc.—are large and roomy. Considering the material aid furnished by the Globe Stove and Range Company, Kokomo, Indiana, and the commendable type of construction of its pipeless warm air heater, dealers should avail themselves of an advantage by writing to this company for literature and details pertaining to agency.

INCREASED BUSINESS NECESSITATES ENLARGEMENT OF PLANT.

With its increasing volume of business, The Columbus Heating and Ventilating Company, Columbus, Ohio, finds that its present facilities are not large enough to meet the demand, therefore, it will erect an addition to its factory, 100x120 feet. The equipment of the new plant unit will be modern in every respect. Consequently, the productive capacity of the company will be enlarged to a degree which will enable it to take care of orders with entire satisfaction to its many customers.

WORKMEN HAVE LONG EXPERIENCE

According to The Henry-Miller Foundry Company, Cleveland, Ohio, manufacturer of the Moncrief Warm Air Heater, shown in the accompanying illustration, the men making the various parts of the Moncrief Warm Air Heater have been doing their particular work for years. It is claimed that through the long experience gained in making the various parts of this warm air heater, these workmen are able to produce goods of unusual merit. Also, the manufacturers themselves have had over twenty years experience in the making of warm air heaters. The ex-



Moncrief Warm Air Heater,
Made by The Henry-Miller
Foundry Company,
Cleveland, Ohio.

acting supervision of The Henry-Miller Foundry Company combined with the excellent workmanship it employs results in the many features of note in the Moncrief Warm Air Heater. For instance, the return flue radiator which is installed in the warm air radiator illustrated herewith, is so made that it will extract the greatest amount of heat from the amount of fuel used. The long fire

herewith, is practical and durable in every respect. Two sides of the grate are always away from the fire. If the ash pit is kept clean there is no danger of the grate bars warping or burning out. Operation of the Moncrief bars is unusually simple. There are four bars which shake in pairs. The bars are so constructed that they require very little handling. The ash pit is large and roomy, having a concave bottom, making it convenient for the removal of ashes. Should a grate bar in some way become defective, it can be easily replaced. Each bar hangs on an individual hook. In order to detach, simply remove the cotter pin holding the center piece and the bars can be taken out. The fire pot in the Moncrief Warm Air Heater is perpendicular. This form of construction has many advantages. Combustion is aided by its large surface. There are many other particulars in the construction of the Moncrief Warm Air Heater which are equally interesting. Dealers who wish to obtain further information on this line of warm air heaters should write to The Henry-Miller Foundry Company, Cleveland, Ohio.

OFFICERS ARE ELECTED AT MEETING.

At the annual meeting of the Haynes-Langenberg Manufacturing Company, St. Louis, Missouri, held recently, the following officers were elected:

GEORGE LANGENBERG, President;

W. J. HAYNES, Vice-president;

E. B. LANGENBERG, Secretary-Treasurer.

The officers of the Haynes-Langenberg Manufacturing Company are all men of ripe experience in the warm air heater field. Their combined knowledge enters into the making of the Haynes-Langenberg Warm Air Heaters.

SATISFIES USERS AND CREATES A PROFIT FOR DEALERS.

To the dealer who looks beyond immediate profits there are open many fields of income. For instance, when a pipeless warm air heater is sold it should be



Independent Adjustable Ceiling Ventilator, Made by the Independent Register and Manufacturing Company, Cleveland, Ohio.

his concern to see that the purchaser derives satisfaction from the product which has been installed in the purchaser's home. Incidentally, the dealer can profit thereby. More rooms can be heated with a pipeless warm air heater if the Independent Adjustable Ceiling Ventilator, illustrated herewith, is installed, declares

the Independent Register and Manufacturing Company, 707 Frankfort Avenue, Cleveland, Ohio. The surplus heat which seeps through the cracks to be found in all buildings is made use of when the article depicted herewith is installed. This device is complete in itself. It consists of a floor register with valves, a ceiling plate, and a sheet metal box. The sheet metal compartment can be arranged to measure from seven to twelve inches. There is no need for any fine adjustments on this ventilator. When received from the factory it can be immediately installed without any tampering. It will fit any ordinary ceiling. The Independent Adjustable Ceiling Ventilator can also be used in connection with stoves. The principle of using the surplus heat by means of this product when used in connection with a stove is the same as that pertaining to the warm air heater. Warmth naturally rises. Where a room is situated directly over the position of a stove, the installation of one of these registers will save the necessity of providing any direct means for heating that room. To wide-awake dealers the economical qualities of these products will be apparent. For detailed information write to the Independent Register and Manufacturing Company, 707 Frankfort Avenue, Cleveland, Ohio.

EXPLAINS THE USE OF ASBESTOS ON WARM AIR HEATER PIPES.

While conducting some simple tests at the Westinghouse Research Laboratory, on the relative thermal resistance of layers of asbestos paper when applied loosely or tightly, respectively, some interesting results were obtained by T. S. Taylor, research physicist at the laboratory, according to a summary in the *Heating and Ventilating Magazine*. In the preliminary tests it was observed that a bare tin vessel containing hot water would cool less rapidly than the same vessel when wrapped tightly with one layer of 0.023-inch sheet asbestos.

This observation, which is just the opposite to the usual ideas held by most engineers, was carefully checked by filling up identical tin vessels, one being left bare and the other covered tightly with sheet asbestos, and then obtaining the cooling curves for each when placed under similar conditions. The uncovered one cooled much more slowly than the one covered with asbestos.

However, to obtain results from conditions more nearly like those met in practice, heaters were made so as to slip into vessels 4 inches in diameter and 20 inches long, and the temperature excess of the air at the center of the vessel above room temperature measured for various inputs and surface conditions.

From these tests it has been found that an asbestos-covered hot air pipe loses 33 per cent more heat from its surface than a bare one. To reduce the heat loss of the covered pipe so as to be equal to that of the bare pipe would require a coating of asbestos, as usually applied, at least 1/16-inch thick. To make the heat loss of the asbestos-covered pipe three-quarters that of the bare one would require a layer of asbestos about 1/9-inch to 1/8-inch thick. However, if the asbestos is put on loosely, three layers of 0.013-inch

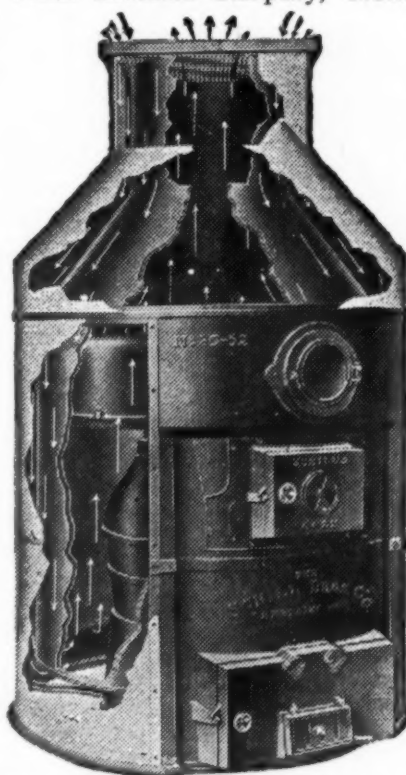
asbestos paper will reduce the heat losses to practically those of a bare pipe. Even with a dust-covered surface, such as usually exists on warm air heater pipes, the asbestos-covered pipe will lose at least 20 per cent more heat than the bare one.

The results show that it is not economical to cover warm-air pipes with the usual thin layer of asbestos, not only on account of the initial cost of material and labor, but on account of heat losses later. Calculations based upon the data obtained indicate the possibility of reducing the heat losses so that there will be a saving of one ton of coal in sixteen.

These characteristics are being investigated in more detail and a more complete report of the experiments will appear shortly.

HAS MANY IMPROVED PARTS.

The outer casing of the Cozy Pipeless Warm Air Heater, depicted herewith, manufactured by The Schill Brothers Company, Crestline, Ohio, is made



Cozy Pipeless Warm Air Heater, Made by The Schill Brothers Company, Crestline, Ohio.

of galvanized iron and the inner casing of black iron with one inch air space. This, say the makers, produces a perfect insulation, keeping the heat within and allowing the outer casing to remain cool. This warm air heater has a one-piece bottom, thus doing away with the bother of leveling. There is no base ring to trouble with in setting. The radiator head is perfectly tight and no leakage is possible. A large and roomy ash pit is a distinctive feature.

The grate is triangular and is built to give service. An improved draft door and a very large ash pit door are characteristics of the Cozy Pipeless Warm Air Heater. Descriptive literature and other desirable information concerning these warm air heaters will be furnished upon inquiry to The Schill Brothers Company, Crestline, Ohio.

EXTENSIVE INFORMATION WILL HELP.

The fluent talker is not always the best informed. One does not have to be a great conversationist to be a good salesman; and one can very well be the former and not the latter at all. But the ability to talk about matters other than the things we are selling does help to keep one mentally alert, fresh and interesting.

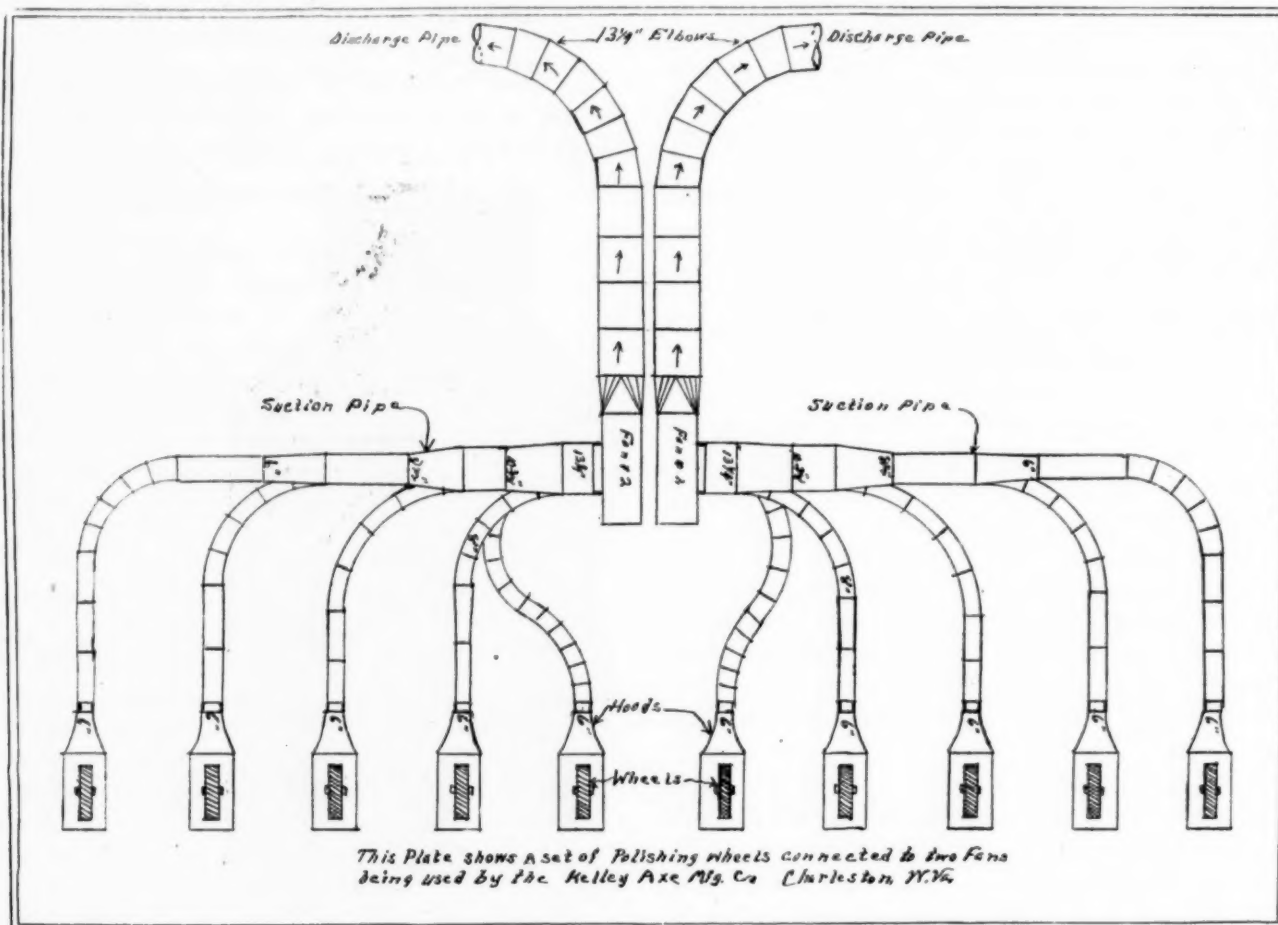
PRACTICAL HELPS FOR THE TINSMITH

BUFFING WHEEL SYSTEM.

By O. W. KOTHE.

We here have a design of dust-removing system installed in an axe factory. In buffing and grinding metal, the dust is naturally heavy and fine. This requires very long radii elbows. All joints should be placed with the flow of air. It is even necessary to

ably from 18 to 16 gauge iron. This fine dust by the strong action of the air giving it a continuous positive force, soon wears on the soft metal piping. Wind gates are placed convenient to each buffing wheel so the air can be shut off when not in use. This saves power, but it also requires some one to watch the motor and keep it adjusted. Observe that if the fan is permitted to run full speed, and having too many



Buffing Wheel System.

make all reducing tees straight on the bottom side, so no pockets are formed for the dust to lodge in and accumulate. If this happens then these accumulations soon pile up and cut off the effectiveness of the system. Hence the pipe would be cleaned out every little while.

For this purpose hand holes with sliding covers should be placed at intervals, especially close where material is liable to lodge. The branch tees are placed in on the sides, because if placed on the bottom a pocket is formed and this acts as a resistance to the flow of material. The discharge pipes are run into dust collectors where the heavier material spins toward the lower outlet, and the air escapes to the top outlet of tubular guard.

Where emery and other metal dust is handled all piping separation should be of heavy material, prefer-

openings closed to where a full capacity of air is not received for the requirements of the speed of fan. It is but natural that the pipe will collapse. This is something that must be watched very carefully, and if the fan can not be regulated, it is best to let enough windgates out to permit the fan having its air. In this case we have two systems, with two single fans. Often double fans are used and would be set in a similar manner.

COMPLETES PROGRAM OF WISCONSIN SHEET METAL CONVENTION.

Among the many absorbing questions scheduled for discussion in the Sixth Annual Convention of the Wisconsin Sheet Metal Contractors' Association, to be held Wednesday, March 17, 1920, in Hotel Wis-

consin, Milwaukee, Wisconsin, are three which deal with trade journals, as follows:

"How many of you subscribe to at least one trade paper?"

"How many of you actually read the trade paper?"

"Can you afford to get along without a trade paper?"

The sessions of the forthcoming convention are arranged with a view to getting the utmost benefit from the time allotted to the various topics on the following program:

Program of the Sixth Annual Convention of the Wisconsin Sheet Metal Contractors' Association, to Be Held

Wednesday, March 17, 1920, in the Colonial Room of Hotel Wisconsin, Milwaukee, Wisconsin.

Wednesday, March 17, 1920.

9:30 a. m. Meeting of the Board of Directors.

10:30 a. m. Business.

Address of Welcome, President E. B. Tonnsen.

Report of Credential Committee.

Reports of Officers.

Report of Auditing Committee.

Roll Call of Officers and Committees.

Reading Minutes of Previous Meeting.

Committee Reports.

Unfinished Business.

Communications.

Collection of Dues.

New Business.

Proposal and Election of New Members.

Address (forty minutes), "The Apprentice Problem," by Stewart Scrimshaw, Supervisor of Apprenticeship, Industrial Commission, Madison.

Talk and Review (forty minutes), "Ventilation and Exhaust Systems as Applied to the Sheet Metal Industry," by C. W. Keniston, Sanitary Engineer, Industrial Commission, Madison.

Survey (thirty minutes), "Business Ethics and Business Burdens," by C. W. Pansch, Racine.

Question Box. Otto Geussenhainer, Sheboygan, Chairman. Join in the discussion, express yourself freely—no stenographical records taken.

Election of Officers.

Miscellaneous.

5:30 p. m. Adjournment. For informal dinner in Badger Room.

7:00 p. m. Round Table Talk.

9:00 p. m. Valedictory, Colonial Room.

Questions for Discussion.

1. What are the aims of this State Association?
2. If no practical results are attainable any way is it worth while to continue?
3. Why cannot employers of Sheet Metal Journeymen who agree to furnish the chairman of the Question Box Committee with questions set a good example by keeping their promise?
4. Is it right that we are always willing to let George do it?
5. How can you separate your store-accounting from the shop?
6. What is the best way to estimate furnace jobs?
7. What can we do to relieve the manufacturer of the necessity of selling direct to our customers?
8. Can the Industrial Commission assist us in getting tinner apprentices?
9. What is the best inducement to your help to get efficient service?
10. How and where are we going to get tanners?
11. What is the best way to solder aluminum?
12. How can we best increase our buying efficiency?
13. Are there any here among us who make the repairing of automobile radiators a specialty?
14. If the slogan "Trade Protection" (from the manufacturer or jobber) is any good at all, why should there not be some trade protection between members of this Association?
15. If competition is the life of trade, in what way is the trade benefited if the members of the trade through competition are kept on the verge of bankruptcy?
16. How many of you subscribe to at least one trade paper?
17. How many of you actually read the trade paper?
18. Can you afford to get along without a trade paper?

19. What is the most practical way of estimating metal cornices?

20. What method is most practical for estimating tile roofing?

21. What can the Association do to interest boys so that they desire to learn the trade?

22. Where has a boy the best opportunity to become an all around tinner?

23. How many masters take an interest in the welfare of their men?

24. Is it not encouraging to the students of the trade school if the masters pay frequent visits to the school to review the work done?

25. How many give a discount for cash and what are the results?

26. How can we meet competition and get a good profit?

27. Is it advisable to go light on purchases during the year 1920?

28. What are the building prospects for the year 1920?

29. Is a Trade Acceptance practical in a retail business?

30. What form of service—not already available through your State or the National Association—is most needed at this time?

31. Did you ever think of showing architects pictures of fine cornices and similar ornamental sheet metal work? Don't you think this would assist in bringing this business back to life?

32. Do you ever commend your employees for good work they have turned out? Or, do they only hear from you when mistakes are made by them?

33. In the presence of a customer or visitor, how do you treat your employees? When the customer or visitor leaves, does he take the impression with him that you lack good sense and that your employee's head is full of scrap iron?

34. Would it not be advisable and beneficial to both employer and employee if the unions would permit the men to work nine hours per day and six days per week, without demanding time and one-half for nine hours work or less per day, when the demand for mechanics is as great as it is at present and the obtaining of mechanics is almost impossible?

The Spread.

Host The Milwaukee Local
In the Badger Room, at 5:45 p. m.

Menu.

Purée of Tomatoes	
Wafers	
Radishes	Olives
Filet Mignon, Natural	
Mashed Potatoes	June Peas
Neapolitan Ice Cream	
and	
Fancy Cake	
Coffee	
Cigars	

7:00 p. m. adjourn to Colonial Room

**INCREASED PRODUCTION IS NEEDED
SAYS LETTER ACCOMPANYING
1920 CALENDAR.**

Everywhere throughout the commercial world to-day emphasis is being placed upon the need for increased production. There is, therefore, a pertinent timeliness in the following paragraph taken from a letter signed by W. E. Manning, vice-president and general sales manager of the Youngstown Sheet and Tube Company, Youngstown, Ohio, which accompanies the 1920 calendar of that company, issued under the direction of R. J. Kaylor, publicity manager, and mailed to customers and friends of the corporation:

"The industrial and commercial skies will brighten with the growth of understanding that real peace and prosperity can come only through productive effort on the part of each individual in his chosen field of labor."

The calendar issued by the Youngstown Sheet and Tube Company contains an instructive picture of its

plant, showing its various units. For a copy of this calendar, those interested should write to the Youngstown Sheet and Tube Company, Youngstown, Ohio.

INVESTIGATES QUALITY OF MATERIALS BEFORE USING THEM.

No more are metals made without strict regard for their ultimate consumption. It has been found through experience that ordinary sheet metal will not do for roofing requirements. Sheet metal that has not certain elements in it will easily rust or corrode. To perfect a sheet metal that will resist the destructive forces of weather and other sources, The Stark Rolling Mill Company, Department 2, Canton, Ohio, experimented widely before it accepted the results from which to make its Toncan Metal. Now the process this sheet metal undergoes has been highly improved so that Toncan Metal is said to resist the acid test because of its purity, homogeneity, and proper heat treatment. All materials used in the composition of Toncan metal are used only after exhaustive tests, investigations, and research. Either for new or repair work; for eave troughs, conductor pipe, roofing, siding, tanks, and, in fact for every need where sheet metal of superior quality is required, Toncan Metal can be used with the assurance that it will satisfactorily withstand severe usage. In this sheet metal is furnished a ferrous metal in sheet form, and with all the virtues of the ancient products, plus the strength, ductility and general workability of modern sheets. Sheet metal contractors who realize what these qualities mean on a job where good metal is required, will recognize the desirability of using Toncan Metal. At least, they should take steps further to acquaint themselves with the properties and uses of Toncan Metal. To do so, sheet metal contractors should write to The Stark Rolling Mills Company, Department 2, Canton, Ohio.

WILL REMODEL AND EQUIP FACTORY.

The Sheet Metal Products Company, Michigan City, Indiana, recently organized, has purchased the former plant of the Granite Brick Company. The building will be thoroughly remodeled and be used for manufacturing purposes. Throughout, the factory will be equipped with the latest types of machinery.

GETS PATENT FOR METALLIC ROOFING.

Under number 1,330,493, United States patent rights have been granted to Arcangel Perrusi, Buenos Aires, Argentina, for metallic roofing described in the following:



A waterproof metal roofing including, in combination, a rafter formed of sheet metal and bent transversely throughout its length into a U-shaped configuration, flanges continuing at right angles from the upper portions of the sides of the rafters and projecting in opposite directions, outwardly extending ribs projecting at right angles from the sides of the rafter, the ribs being integral with the rafter and possessing a double thickness for reinforcing purposes,

plates resting on the ribs and having upwardly curved edges and a slidable and removable flanged retainer having its flat body portion resting on the flanges and its flanged edge portions engaged with the curved edges of the plates on the ribs.

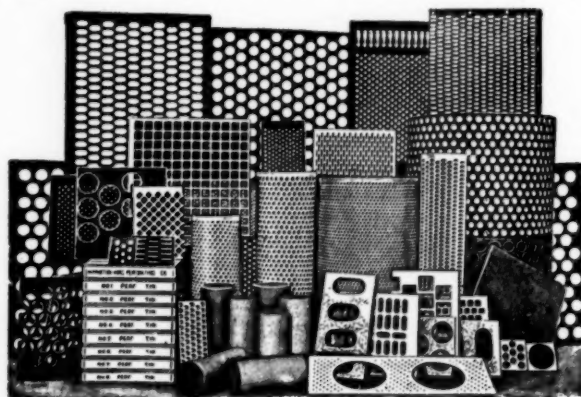
REINCORPORATES AND INCREASES ITS CAPITAL STOCK.

The R. H. Blumer Manufacturing Company, Main and Pearl Streets, Council Bluffs, Iowa, has been re-incorporated with a capital stock of \$150,000 under the name of the Acme Manufacturing Company. This company contemplates building a new plant in the spring in order to increase its output of sheet iron products.

SPECIALIZES IN THE MANUFACTURE OF PERFORATED METALS.

Specialization is desirable because it follows that when one concentrates on a particular thing the energy expended is more likely to bring good results. Were the same individual to divide his energy and time in the making of many articles, each unrelated to the other, he could not bring forth the same degree of care and attention as when he specializes in one product. The Harrington and King Perforating Company, 610 North Union Street, Chicago, Illinois, devotes its entire facilities to the producing of one line of goods, namely, perforated metals.

In the illustration herewith is shown an assortment of the goods made by this company. For almost every requirement of perforated metals, The Harrington



An Assortment of Perforated Metals Manufactured by The Harrington and King Perforating Company.

and King Perforating Company, has a product which will satisfactorily answer the purpose. Perforated sheet copper, brass, bronze, aluminum, lead, zinc, monel metal and of other alloys, can be furnished by this company. For coal ores, stone, cement, all kinds of screens, plates and sheets can be supplied. The Harrington and King Perforating Company can ship all kinds of grain cleaning and sorting apparatus for centrifugal linings, filter press plates, drying floors, false bottom strainers, extractor baskets, revolving screens, shaking screens, chute screens, grills and ornamental screens, etc., upon a short notice. To obtain anything in perforated metal write to The Harrington and King Perforating Company, 610 North Union Street, Chicago, Illinois.

MEET TO CELEBRATE FIFTEENTH ANNIVERSARY OF ORGANIZATION.

The sheet metal contractors of Dayton, Ohio, celebrated the fifteenth anniversary of the founding of the National Sheet Metal Contractors Association, Tuesday, February 24, 1920, at Dayton, Ohio. Following the banquet, the guests were entertained at a theater party. The entire celebration was permeated with jollity and the spirit of friendliness. Among the visitors were: Arthur P. Lamneck, Columbus, Ohio, President of the National Association of Sheet Metal Contractors, and William Kaiser, State Secretary, Columbus, Ohio.

WILL RESIST CORROSION AND RUST.

By means of well-equipped laboratories combined with many years' experience in the production of metals for all commercial purposes, the Inland Steel Company, First National Bank Building, Chicago, Illinois, has been enabled to produce its non-corrosive, rust-resisting iron known to the trade as Vismara. This metal has a high degree of tensile strength. Therefore, it is easily workable. Vismara is uniform throughout. Each sheet is an exact replica of a previously bought one. The composition of the metal used in manufacturing this metal is carefully put together. In forming, Vismara is handled by the latest types of machinery. This metal is sold in sheets and plates and is especially adapted for culverts, silo tops, gutters, tanks, stacks, and other similar products which are exposed to the elements of corrosion and rust. Because of its structure, Vismara will withstand the destructive elements of the weather and the action of water upon metals. It can be supplied in black or galvanized sheets and plates. The location of Inland Steel supply stations at Dallas, Kansas City, Denver, Los Angeles, Detroit, Milwaukee, Portland, San Francisco, Seattle, St. Louis, St. Paul, makes short hauls possible and thereby reduces freight rates. For detailed information regarding Vismara or any other metal product manufactured by the Inland Steel Company, First National Bank Building, Chicago, Illinois, a letter to this company will be promptly answered.

CONVENTION DATE IS ARRANGED.

The Illinois Sheet Metal Contractors' Association will hold its Seventh Annual Convention at Bloomington, Illinois, April 14 and 15, 1920. Frank I. Eynatten, Peoria, Illinois, is secretary of the Illinois Association. The coming convention promises to be the most interesting ever held because of the unprecedented developments in the sheet metal industry since the last annual meeting of the Association.

ARRANGE PROGRAM TO CELEBRATE FIFTEENTH ANNIVERSARY.

The sheet metal contractors of Columbus, Ohio, have arranged an attractive program to celebrate the fifteenth anniversary of the founding of the National Sheet Metal Contractors Association March 17, 1920. All sheet metal contractors of Columbus, Ohio, and

vicinity are urged to attend as elaborate arrangements to entertain guests are contemplated.

FLAME CAN BE MOVED UP OR DOWN.

The burner on the Number 1 Fire Pot, illustrated herewith, manufactured by the Clayton and Lambert



Number 1 Fire Pot, Made by the Clayton and Lambert Manufacturing Company, Detroit, Michigan.

Manufacturing Company, Detroit, Michigan, is swiveled. This permits the flame to be moved up or down. Cleanout plugs are attached and cleaning is very easy. The tank is made of seamless drawn steel. A large funnel and filler with bottom and fittings welded in, makes it strong and durable, it is claimed. The burner produces a pure blue flame, using comparatively little gasoline. Besides the fire pot illustrated herewith, the Clayton and Lambert Manufacturing Company, Detroit, Michigan, makes several other types of fire pot. Only the best grade of material enters into the manufacture of all its products, states the company. Inquiries concerning its goods will receive prompt and satisfactory attention if addressed to Clayton and Lambert Manufacturing Company, Detroit, Michigan.

CHANGES BUSINESS CONNECTIONS.

Ray Green, who was up till recently secretary to the assistant general superintendent of the Youngstown Sheet and Tube Company, Youngstown, Ohio, is now connected with the Ohio Steel Products Company, Niles, Ohio. Mr. Green has a wide knowledge of the sheet metal business, and all indications point to his satisfactorily filling his new position.

TAKES OVER HEATER BUSINESS.

The Alder Sheet Metal Works, 551 Alder Street, Portland, Oregon, has taken over the American Heater Company. R. B. Madans is manager of the company. Hereafter it will specialize in the manufacture of Diamond Warm Air Heaters. These warm air heaters are of the heavy plate iron types with all parts welded.

SETS DATE FOR ANNUAL CONVENTION.

The Ohio State Sheet Metal Contractors' Association will hold its annual convention at Toledo, Ohio, July 20, 21, and 22, 1920. The complete program for this convention has not been arranged as yet. Further particulars will appear in a future issue of AMERICAN ARTISAN AND HARDWARE RECORD.

INDIANA SHEET METAL CONTRACTORS FORM STATE ORGANIZATION.

Under conditions most favorable to the development of a strong and beneficial organization, representative sheet metal contractors from various parts of Indiana gathered in Claypool Hotel, Indianapolis, Thursday, February 19, 1920, and formed the Indiana Sheet Metal Contractors' Association in full affilia-

tion with the National Association of Sheet Metal Contractors of the United States. They elected JOSEPH GARDNER of Gardner and Company, Indianapolis, Indiana, as their first President, and W. H. SHIRLEY, of the W. H. Johnson Company, Indianapolis, Indiana, as their first Secretary. Both these men are well and favorably known throughout the trade and, it is predicted, will do much toward making the newly organized Indiana Sheet Metal Contractors' Association a powerful factor in promoting the interests of the sheet metal business throughout the State of Indiana.

PATENT SOLDER FOR ALUMINUM.

Julian Segura, New York, New York, has secured United States patent right, under number 1,328,604, for solder for aluminum described as follows:

A solder for aluminum composed of lead ranging from 75 to 95 parts; tin ranging from 185 to 205 parts; zinc ranging from 185 to 205 parts; antimony ranging from 5 to 20 parts and white metal ranging from 5 to 25 parts (the composition of the white metal ranging from 80 to 90 per cent tin, 5 to 15 per cent antimony, and 3 to 10 per cent copper).

NOTES AND QUERIES.

Tin Cups.

From John F. Werner, Stewartville, Minnesota.

Can you tell me where I can get tin cups with our name stamped in?

Ans.—American Can Company, 104 South Michigan Avenue, Chicago, Illinois.

Spring for Holding Tools in Place.

From John F. Werner, Stewartville, Minnesota.

Kindly advise who makes a spring for holding tools in place in a tool kit.

Ans.—Advance Spring and Wire Company, 1749 Carroll Avenue, Chicago, Illinois.

Aluminum Solder.

From G. L. Ferrell, Milledgeville, Georgia.

I would like to know who makes aluminum solder.

Ans.—L. B. Allen and Company, Incorporated, 4519 North Lincoln Street, and Transom Manufacturing Company; both of Chicago, Illinois.

Bugle Mouth Pieces.

From G. L. Ferrell, Milledgeville, Georgia.

Will you please inform me where I can purchase bugle mouth pieces?

Ans.—Joseph Jiran, 1333 West 18th Street, Chicago, Illinois.

Repairs for Doran Gasolene Sad Iron.

From M. E. Southwick, Menville, Iowa.

Where can I obtain repairs for a Doran gasolene sad iron?

Ans.—Gloria Light Company, 1100 Washington Boulevard, Chicago, Illinois.

Brass Unions.

From L. A. Brand, Riverside Tin Shop, Sioux City, Iowa.

Kindly advise where I can obtain brass unions to solder on gas feed pipes outside diameter of pipe one-quarter inch.

Ans.—Illinois Malleable Iron Company, 1801 Diversey Boulevard, Chicago, Illinois; Queen City Brass and Iron Works, Cincinnati, Ohio; Lunkenheimer Company, Beekman and Waverly, Cincinnati, Ohio.

"Apex" Electric Washer.

From H. M. Clark, Clark Hardware Company, Windom Minnesota.

Please advise who is the manufacturer of the Apex electric washer.

Ans.—Apex Appliance Company, 3223 West 30th Street, Chicago, Illinois. Their Minnesota Agent from whom you can purchase an Apex electric washer is Roberts Hamilton Company, 413 South 4th Street, Minneapolis, Minnesota.

"Beauty" Range.

From J. H. Bedford, Bridgeport, Illinois.

Can you give me the address of the manufacturer of the Beauty six hole cast range number 188-A?

Ans.—Baker Stove Works, Belleville, Illinois.

"Success" Oil Cook Stove.

From C. Arthur Roy, Corning, New York.

Will you kindly inform me who manufactures the Success oil cook stove?

Ans.—Pittsburgh Lamp Brass and Glass Company, Pittsburgh, Pennsylvania.

Street Flushing Machine.

From A. D. Geigel, Geigel Hardware Company, Monroe, Wisconsin.

Kindly advise where we can purchase a street flushing machine; one thousand gallon capacity, and two motor system.

Ans.—Kindling Machine Company, Milwaukee, Wisconsin; Sanitary Street Flushing Machine Company, 508 Biddle Street, St. Louis, Missouri; Studebaker Corporation, South Bend, Indiana.

Manufacturers' Trade-Mark.

From Gust Baker, 441 Madison Street, Ft. Wayne, Indiana.

What is the full name of the manufacturers whose trade-mark is a monogram of the letters "T. R. & S. Co."?

Ans.—Tubular Rivet and Stud Company, 87 Lincoln Street, Boston, Massachusetts.

Address of Buller Manufacturing Company.

From Thomas W. Cox, Haynes-Langenberg Manufacturing Company, St. Louis, Missouri.

Will you give us the address of Buller Manufacturing Company?

Ans.—They are located at 258 Twenty-fourth Street, Milwaukee, Wisconsin.

Template.

From The Budke Stamping Company, Canonsburg, Pennsylvania.

Will you kindly inform us where we can obtain a template for four pieced elbow shear blades?

Ans.—Union Paper and Twine Company, 125 St. Clair Avenue, Northwest, Cleveland, Ohio; and 538 Brisbane Boulevard, Buffalo, New York.

Advertising Novelties.

From Newman Hardware and Stove Company, 904 Broadway, Columbia, Missouri.

Please advise us where we can buy advertising novelties, such as match safes, fans, and so forth.

Ans.—Carroll J. Bruce, 3057 Carroll Avenue, Chicago, Illinois; E. B. Estes and Sons, 364 Fifth Avenue, New York City; Ketterlinus Lithographic Manufacturing Company, 4th and Arch Street, Philadelphia, Pennsylvania; Woodward-Tiernan Printing Company, 309 North Third Street, St. Louis, Missouri, and Parisian Novelty Company, La Salle and 22nd Streets, Chicago, Illinois.

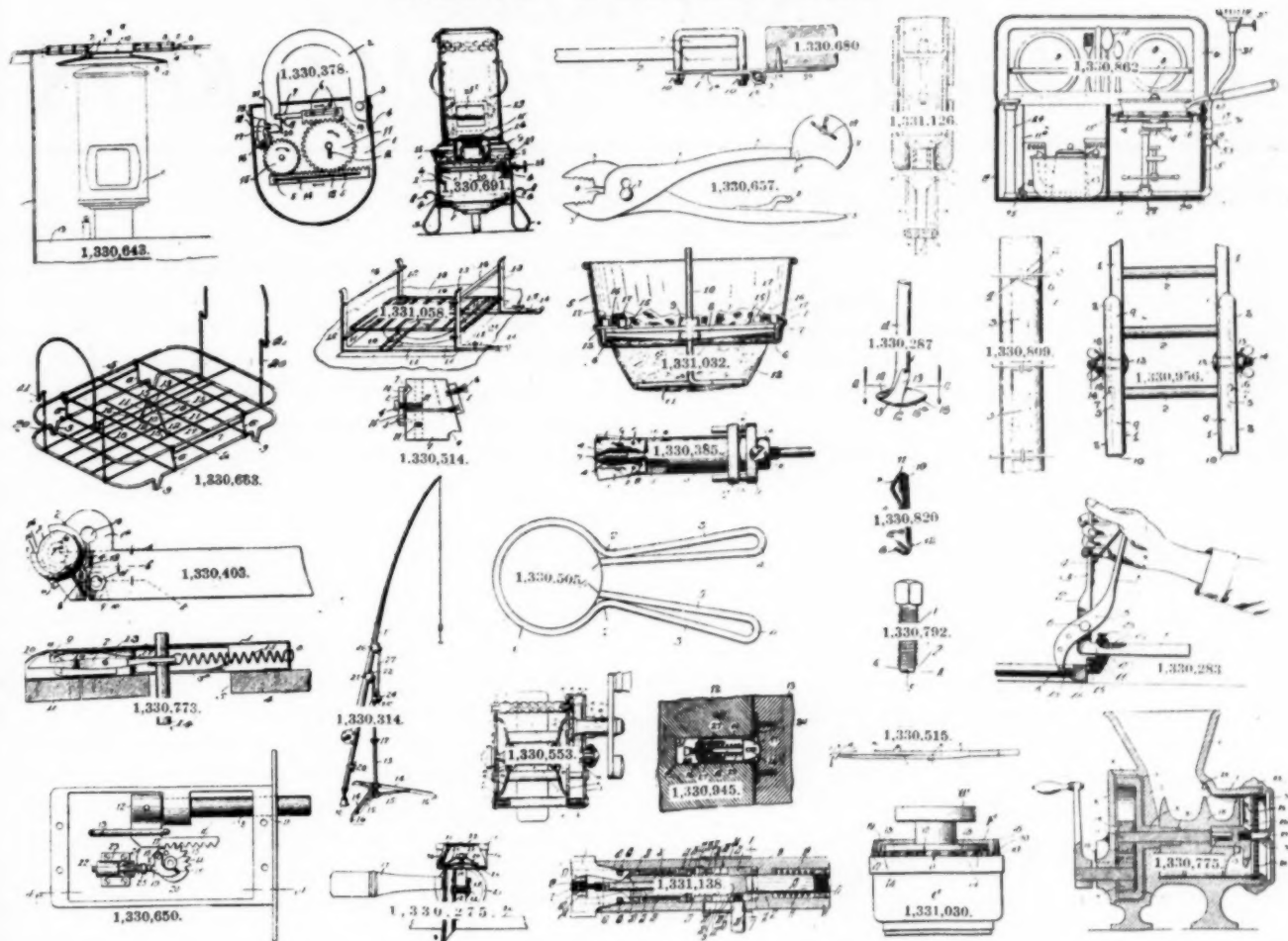
Flashing Hooks.

From A. F. Martin, Bruno Martin Company, 816 James Avenue, Saginaw, Michigan.

I would like to know where to get flashing hooks.

Ans.—These can be obtained from the Berger Brothers Company, 229-231 Arch Street, Philadelphia, Pennsylvania.

NEW PATENTS.



1,330,275. Garden-Seeder. Henry Osmundson, Slate, Iowa, assignor to William Howard Osmundson, Perry, Iowa. Filed September 13, 1918.

1,330,283. Brad-Driver. Ferdinand P. Scheidemantle, Ellwood City, Pennsylvania. Filed May 1, 1919.

1,330,287. Cutting-Tool for Wood-Carving Machines. Willebald C. Stenger, Chicago, Illinois. Filed June 6, 1918.

1,330,314. Combination Alarm and Indicator for Fishing-Rods. Ira E. Gott and Joseph O. Longstreet, Los Angeles, California. Filed March 5, 1918.

1,330,378. Lock. Peter Lesiuk, Kohler, Wisconsin. Filed October 31, 1919.

1,330,385. Taper-Boring Tool. Rochus Muden, Hartford, Connecticut. Filed November 25, 1919.

1,330,403. Tool. Robert G. Smith, Irvington, New Jersey. Filed May 13, 1919.

1,330,505. Jar Opener or Wrench. Henry G. Wernimont, Washington, D. C. Filed January 16, 1919.

1,330,514. Tool-Holder. Walter C. Brooks, Springfield, Massachusetts. Filed May 21, 1919.

1,330,515. Shears. William C. Bryant, Columbus, Ohio. Filed April 11, 1919.

1,330,553. Fishline-Reel. William Shakespeare, Jr., and William Schmid, Kalamazoo, Mich., assignors to Shakespeare Company, Kalamazoo, Michigan. Filed April 8, 1919.

1,330,643. Oil-Cook-Stove Lid and Fender. Thomas J. McKay, Atlanta, Georgia. Filed July 15, 1919.

1,330,650. Lock. Zygmunt Pehel, New York, New York, assignor of one-third to Wojciech Zych, Elizabeth, New Jersey. Filed June 13, 1919.

1,330,657. Combination Tool and Lock. Willard A. Skinner, Manchester New Hampshire. Filed August 21, 1919.

1,330,663. Jar-Holder. Paul J. Timberlake, Jackson, Michigan. Filed September 10, 1918.

1,330,680. Hinge. Waller James Caldwell, Rives, Tennessee. Filed June 12, 1919.

1,330,694. Oil Heating Stove. Guy W. Ferdon, Cresskill, New Jersey. Filed December 19, 1918.

1,330,773. Door-Latch. Lloyd D. Angir, Potlatch, Idaho. Filed June 6, 1919.

1,330,775. Meat-Grinder. William John Anderson, Duluth, Minn. Filed May 12, 1919.

1,330,792. Set-Screw. Henry H. Frick, Fricks, Pennsylvania. Filed April 22, 1919.

1,330,809. Metallic Fence. Perry C. James, Macomb, Illinois. Filed March 10, 1919.

1,330,820. Paring Knife. Walter F. Safford, Providence, Rhode Island. Filed July 2, 1919.

1,330,862. Box Cooking Kit. Battie B. Gilbert, Huntington, West Virginia, assignor of one-half to William J. Fields, Olive Hill, Kentucky. Filed June 2, 1919.

1,330,945. Spring Door-Catch. Gustave A. Kuhn, Cambridge, Mass. Filed June 13, 1919.

1,330,956. Ladder. Moritz Schulze, Newark, New Jersey. Filed February 25, 1919.

1,331,030. Device for Holding Tools or Work. John Edward Ryan, Boston, Massachusetts. Filed October 19, 1917.

1,331,032. Attachment for Coffee-Urns. John N. Shaw, Seattle, Washington. Filed November 11, 1919.

1,331,058. Broiling-Rack. Nellie Godfrey, Fitchburg, Massachusetts. Filed September 23, 1919.

1,331,126. Bit-Cleaner. Sosthene Robichaux, Saratoga, Texas, assignor of one-half to A. W. Roark, Hardin county, Texas. Filed October 21, 1918.

1,331,138. Collapsible Tool. Philip P. Baldwin, Greenfield, Massachusetts. Filed March 26, 1919.

PROMOTION COMES TO THE WORKER.

To win promotion, you must be original, you must be accurate and systematic. Rely on your own resources. Don't let your load rest on somebody else and partly in your personal appearance and presence. Use your own powers. Your qualifications for a higher and better position will, then, be recognized.

WEEKLY REPORT OF TRADE AND THE MARKETS

STEEL TRADE IS UNABLE TO KEEP UP WITH DOMESTIC DEMANDS.

The drawback to the trade at present is the widespread shortage in steel products everywhere in this country. Some of the exporting concerns have agreements with their members mills whereby a certain percentage of each mill's production is set aside for the export trade, but in general the steel trade is unable to meet the domestic demand, and therefore the industry as a whole is only figuring to lay the foundation of a foreign trade to be developed further when steel supplies are easier than at present.

It is reported that the syndicate in charge of the marketing of 135,000 tons of steel owned by the Government and used during the war as ballast in troop ships has about completed arrangements for the sale to steel mills throughout the country. The steel is mostly in steel bars, billets, shapes, rods and angles.

This steel will come in mighty convenient for steel mills as practically all are overburdened with orders which they are unable to fill and the volume of business in the industry at present continues to measure the maximum output possible instead of the demand as under normal times.

The steel industry is having its hands full trying to cope with the tremendous accumulation of demand in this country, for at the same time farsighted organizations are already laying the foundation of a foreign trade which should be available when the present home demand has been satisfied and the mills are forced to look to new fields for business.

STEEL.

Attention is directed to the fact that the high priced sales of finished steel are of relatively small tonnages; and, as large quantities are being delivered at March 21, 1919, prices, the average is not up too much. It must also be noted that the market has been made largely by psychology, buyers being much scared. Many mills have scarcely been sellers at all, and there is a serious question what would be the effect upon the minds of buyers, now so eager to grab any material offered, no matter at what price, if these mills should suddenly become free sellers. They could do so if they liked, for the independent mills in general are now sold as far ahead as they usually are in a time of moderate activity. There is a possibility that buyers would become very reserved, and would not take hold.

COPPER.

The copper market is passing through an off season, as it always must following a period of heavy buying such as that of November, December and

January. A repetition of that activity is not to be expected until well along in March. In the meantime, however, buying for export is likely to be resumed almost any day. European manufacturers find their stocks are getting very low and they are indisposed to discontinue their activities solely on account of unfavorable exchange rates. In the event of the sudden appearance of considerable demand from Europe it is probable that domestic consumers also would come into the market and buy, in an attempt to anticipate an advance in prices.

Producing interests are playing a safe game. They realize that the credit situation does not warrant the production of a larger tonnage of copper now than can be sold currently. Although there were indications a few weeks ago that production would be increased somewhat, it seems likely now that the policy of curtailment will be adhered to generally throughout this month and the greater part of next. Increasing demand for copper, however, will be likely to bring about a general expansion of productive operations in April and May.

The most interesting development is the increased demand from domestic consumers for Electrolytic copper to be shipped in May and June. Producers have made substantial sales for June shipment in the last few days. Several consumers are also in the market for third quarter shipment but thus far the large producers are not willing to consider the sale of important tonnages for shipment after June. The tone of the market, moreover, is stronger with producers.

Most of the cheap offerings have been readily absorbed and it seems that little metal is held in speculative quarters. Producers have not changed their quotation, although they do not report any increase in new business. But the time is drawing nearer when domestic consumers will have to consider new commitments and actual buying will set in.

The sharp recovery in the sterling exchange had also a sentimental effect on the copper market, as it will improve the prospect for heavier exports. By this time England, France and Italy have worked down their surplus copper, accumulated at the end of the war, and those countries will soon be in the market for fresh supplies.

TIN.

A sharp advance has taken place in all positions of tin. Straits tin on the spot was marked up 4 cents a pound, while future shipments from the Straits also underwent an increase. The same advance was noted in 99 per cent tin for nearby delivery and for shipments during April. A higher market in London and Singapore, which were quoted at an advance of £13 per ton, combined with a sharp recovery in sterling

exchange, was at the bottom at the advance in the domestic market. As consumers have bought only sparingly for the last months, good buying appeared at the advance.

The advance of tin prices is reflected in the Chicago market by an increase of 4 cents per pound in pig tin, from 66 cents to 70 cents per pound, and an increase of $3\frac{1}{2}$ cents in bar tin, from 68 cents to $71\frac{1}{2}$ cents per pound.

LEAD.

The outstanding feature of the lead market is continuance of strength with all producers sold well ahead and prompt metal exceedingly difficult to obtain. Most producers continue to sell a quarter of a cent above the leading interest's quotation on March, and the premium on prompt is still an eighth of a cent additional.

Some of the producers report that their output since January 1st has been only two-thirds of what they had counted on, and the outlook for any rapid improvement in the conditions that have handicapped them is not promising. They are therefore disinclined to quote freely, as their regular trade has been calling for a larger tonnage than usual.

Demand is active for prompt shipment, with more disposition on the part of buyers to contract for March, April, and even May shipment. It is difficult to obtain selling offers for these forward positions at much less than the prompt price, as sellers feel that the apparently strong situation may shortly force another advance in the "official" price.

In the Chicago market American pig lead has advanced from \$0.35 to \$0.85 per 100 pounds, and bar lead from \$0.60 to \$10.10 per 100 pounds.

SOLDER.

An advance of prices has taken place in the Chicago market for solder. The new quotations are: Warranted, 50-50, per pound, 40.00 cents; Commercial, 45-55, per pound, 37.60 cents; and Plumbers', 35-25 cents per pound.

ZINC.

Demand for zinc continues, while supplies are so depleted that producers have hardly anything to offer for nearby delivery. In the Chicago market sheet zinc in cask lots has advanced from 13 to 14 cents per pound and in less than cask lots from $13\frac{1}{4}$ - $13\frac{1}{2}$ cents to $14\frac{1}{4}$ - $14\frac{1}{2}$ cents per pound.

TIN PLATE.

Reports from Pittsburgh indicate that the tin plate industry is operating at about 85 per cent of capacity, and that is very nearly a normal operation. There is a little idleness from breakages and various incidental causes, and somewhat more from fuel and steel shortage. So far as can be ascertained there is no idleness whatever from lack of orders. On the contrary, the contract requirements are absorbing tin plate as fast as it can be shipped, as a rule, while the export market would absorb any extra production the mills might be able to accomplish. A moderate amount of export business is being taken by the mills that engage at all

in that trade. Prices realized are generally \$9 to \$10 per base box, Pittsburgh, net cash. Such prices are not regarded as excessive, by any means, or as of a profiteering character. The best export markets are those in which the buyer is at little if any disadvantage on account of exchange rates, those markets being Japan and South America.

Manufacturers generally are committed to the Pittsburgh base price, and while none of them is taking on any new business at that price, only a few of them, and these the producers of only small tonnages, are accepting premium business. The industry as a whole is inclined to apply production against old orders and to get these out of the way before taking on fresh business.

SHEETS.

In the Eastern district fair tonnages of blue annealed sheets have been booked for third quarter during the past week by the leading eastern maker but this business was done only at the urgent solicitation of buyers and only regular customers are being taken on. Very little second quarter tonnage is being accepted because of the sold-up condition.

Chicago manufacturers of sheets are so situated that they are not in a position to quote on further business and consumers who desire further supplies are making the rounds uniformly without success. The eastern situation seems to be fully as tight as in the West, and buyers are unable to place business, although offering heavy premiums over quotations at which last sales were made.

Conditions with the independent manufacturers are no better than they are with the leading interest, and it can not be said that a great deal of headway yet has been made in the direction of cutting down the business backed up by the labor and fuel situations of the last quarter of 1919.

OLD METALS.

Wholesale quotations in the Chicago district which may be considered nominal are as follows: Old steel axles, \$33.00 to \$35.00; old iron axles, \$35.00 to \$36.00; steel springs, \$25.50 to \$26.50; No. 1 wrought iron, \$27.00 to \$28.00; No. 1 cast, \$38.00 to \$39.00, all net tons. Prices for non-ferrous metals are as follows, per pound: Light copper, $14\frac{1}{2}$ cents; light brass, $9\frac{1}{2}$ cents; lead, 6 cents; zinc, $5\frac{1}{2}$ cents; cast aluminum, $24\frac{1}{2}$ cents.

PIG IRON.

The story of the iron trade these days is one of trouble, declares the weekly market report of the Matthew Addy Company, Cincinnati, Ohio. Nothing is going quite right. The main difficulty is a lack of coke and this is in a great measure due to a lack of transportation. There are hundreds of coal mines operating only two and three days a week, and this condition comes from a lack of empty cars in which to ship. No business can be run profitably when it operates only half time, and the troubles of the coal mines are passed along, oftentimes in a magnified form, to the iron furnaces. The recent severe weather has made a bad matter worse.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS.		LEAD		AUGERS		BEATERS.	
PIG IRON.		American Pig..... 9 85 Bar..... 10 10		Boring Machine.....60% Irwin's.....25% Carpenter's Nut.....50%		Carpet. Per doz. No. 7 Tinned Spring Wire... \$1 10 No. 8 Spring Wire coppered... 1 50 No. 9 Preston..... 1 75	
Basic..... \$43 00 Southern Fdy. No. 2... 46 60 Lake Sup. Charcoal... 57 50-60 50 Malleable..... 43 50		Full coils.....per 100 lbs. \$12 00 Cut coils.....per 100 lbs. 12 25		Hollow. Bonney's.....per doz. 30 00		Egg. Per doz. No. 50 Imp. Doyer.....\$ 1 10 No. 102 " " tinned... 1 35 No. 150 " " hotel... 2 10 No. 10 Heavy hotel tinned... 2 10 No. 13 " " " " 3 30 No. 15 " " " " 3 60 No. 18 " " " " 4 50	
FIRST QUALITY BRIGHT TIN PLATES.		TIN.		Post Hole. Iwan's Post Hole and Well....30% Vaughan's, 4 to 9-in...per doz.\$14 00		Ship. Ford's, with or without screw, Net list	
IC 14x20.....112 sheets \$14 15 IX 14x20..... 16 05 IXX 14x20..... 17 70 IXXXX 14x20..... 19 10 IXXXX 14x20..... 20 30 IC 20x28..... 28 30 IX 20x28..... 32 10 IXX 20x28..... 35 40 IXXX 20x28..... 38 20 IXXXX 20x28..... 40 60		Plumb.Net Coojers'. Barton's.....Net White's.....Net		Brad. No. 3 Handled.....per doz. \$0 65 No. 1050 Handled.... " 1 40 Shouldered, assorted 1 to 4,per gro. 4 00 Patent ast'd. 1 to 4.. " 85		Hand. 8 9 10 12 Per doz.\$11 50 13 00 14 75 18 00	
COKE PLATES.		ADZES.		Harness. Common..... " 1 05 Patent..... " 1 00		Moulders'. 12-inch.....Per doz. 20 00	
Cokes, 180 lbs..... 20x28 \$18 30 Cokes, 200 lbs..... 20x28 18 50 Cokes, 214 lbs.....IC 20x28 18 90 Cokes, 270 lbs.....IX 20x28 20 80		Rairoad. Plumba.....Net		Peg. Shouldered..... " 1 60 Patented..... " 75		BELLs. 3-inch Nickeled Rotary Bell, Bronzed base.....per doz. \$5 50	
BLUE ANNEALED SHEETS.		AMMUNITION.		Scratch. No. IS, socket hand'd, per doz. 2 50 No. 344 Goodell-Pratt, List, less.....35-40% No. 7 Stanley " 2 25		Cow. Kentucky.....30%	
No. 10.....per 100 lbs. \$5 27 No. 12.....per 100 lbs. 5 32 No. 14.....per 100 lbs. 5 37 No. 16.....per 100 lbs. 5 45		Peters Cartridges. Semi-Smokeless.....Less 18% Smokeless.....Less 18% Shells, Loaded, Peters. Loaded with Black Powder, Less 15% Loaded with Smokeless Powder, medium grades.....Less 15% Loaded with Smokeless Powder, high grade.....Less 15% Winchester. Smokeless Repeater Grade, Less 15% Smokeless Leader Grade.....Less 15% Black Powder.....Less 15% U. M. C. Nitro Club.....10&5% Arrow.....10&5% New Club.....10&5%		Broad. Plumba, West, Pat.....List " Can. Pat.....\$69 00 Firemen's (handled),per doz. 21 00		Door. Per doz. New Departure Automatic... \$ 7 50 Rotary. 3 -in. Old Copper Bell..... 6 00 3 -in. Old Copper Bell, fancy. 8 00 3 -in. Nickeled Steel Bell.... 6 00 3 1/2-in. Nickeled Steel Bell.... 6 50	
ONE PASS COLD ROLLED BLACK.		Win Wads—per 1000. Winchester 7-8 gauge... 10&7 1/2% " 9-10 gauge... 10&7 1/2% " 11-28 gauge... 10&7 1/2% Powder. DuPont's Sporting, kegs.\$11 25 " " 1/4 kegs. 3 10 DuPont's Canisters, 1-lb. 56 " Smokeless, drums. 43 50 " " kegs. 22 00 " " 1/4-kegs. 5 75 " " canisters. 1 00 L. & R. Orange, Extra Sporting kegs. 11 25 L. & R. Orange, Extra Sporting 1/4-kegs. 5 90 L. & R. Orange, Extra Sporting 1/4-kegs. 3 10 L. & R. Orange, Extra Sporting 1 lb. canisters..... 56 L. & R. Orange, Extra Sporting 1/4 lb. canisters..... 32 L. & R. Orange, Extra Sporting 1/4-lb. canisters..... 22 Hercules "E.C." and "Infallible" 50 can drums..... 43 50 Hercules "E. C." kegs..... 22 50 Hercules "E. C." 1/4-kegs..... 11 25 Hercules "Infallible," 25 can drums..... 22 00 Hercules "Infallible," 10 can drums..... 9 00 Hercules "E. C." 1/4-kegs..... 5 75 Hercules "E.C." and "Infallible" canisters..... 1 00 Hercules W. A. .30 Cal. Rifle, canisters..... 1 25 Hercules Lightning Rifle, canisters..... 1 25 Hercules Sharpshooter Rifle, canisters..... 1 25 Hercules Unique Rifle, canisters 1 50 Hercules Bullseye Revolver, canisters..... 1 00		AXES. First Quality, Single Bitted, 3 to 4 lb.....per doz. 15 50 First Quality, Double Bitted,per doz. 20 50		Hand. Hand Bell polished...List plus 5% White Metal..... " 5% Nickel Plated..... " 5% Swiss..... " 10%	
GALVANIZED.		L. & R. Orange, Extra Sporting kegs. 11 25 L. & R. Orange, Extra Sporting 1/4-kegs. 5 90 L. & R. Orange, Extra Sporting 1/4-kegs. 3 10 L. & R. Orange, Extra Sporting 1 lb. canisters..... 56 L. & R. Orange, Extra Sporting 1/4 lb. canisters..... 32 L. & R. Orange, Extra Sporting 1/4-lb. canisters..... 22 Hercules "E.C." and "Infallible" 50 can drums..... 43 50 Hercules "E. C." kegs..... 22 50 Hercules "E. C." 1/4-kegs..... 11 25 Hercules "Infallible," 25 can drums..... 22 00 Hercules "Infallible," 10 can drums..... 9 00 Hercules "E. C." 1/4-kegs..... 5 75 Hercules "E.C." and "Infallible" canisters..... 1 00 Hercules W. A. .30 Cal. Rifle, canisters..... 1 25 Hercules Lightning Rifle, canisters..... 1 25 Hercules Sharpshooter Rifle, canisters..... 1 25 Hercules Unique Rifle, canisters 1 50 Hercules Bullseye Revolver, canisters..... 1 00		BAGS, PAPER NAIL. Pounds..... 10 16 20 25 Per 1,000...\$5 00 6 50 7 50 9 00		BEVELS, TEE Stanley's rosewood handle, new list.....Nets Stanley's iron handle.....Nets	
WELLSVILLE POLISHED STEEL.		BALSANCES, SPRING. Pelouze.....20%		BITS. Auger. Jennings Pattern.....25% Ford Car.....List plus 5% Ford's Ship..... " 35% Irwin..... " 20% Russell Jennings..... " 33 1/2% Clark's Expansive..... " 5% Steer's " Small list, \$22 00..... " " Large " \$26 00..... Irwin Car..... " 35% Ford's Ship Auger pattern Car.....List plus 5% Center.....10%			
KEYSTONE HAMMERED POLISHED STEEL.		BASKETS. Clothes. Small Willow.....per doz. 15 00 Medium Willow..... " 17 00 Large Willow..... " 20 00 Galvanized Steel, 1/4 bu. 1 bu. 1 1/2 bu. Per doz.\$11 50 \$17 00 \$22 00		Dowel. Russell Jennings.....20%			
Discontinued. New product will be announced later.		Gimlet. Standard Double Cut. Doz. \$1 10—\$1 60 Countersink.....Doz. 1 80		Reamer. Standard Square.....Doz. 2 50 American Octagon... " 2 50			
BAR SOLDER.		Screw Driver. No. 1 Common.....20 No. 26 Stanley.....75					
Warranted, 50-50... per 100 lbs. 40 00 Commercial, 45-55 " 37 60 Plumbers'..... " 35 25		ZINC.					
In slabs..... 10c		SHEET ZINC.					
Cank lots..... 14 c Less than cank lots..... 14 1/2-14 3/4 c		COPPER.					
Copper Sheet, base.....29 1/2 c		ASBESTOS.					
		Board and Paper, upto 1/16" 17c per lb. Thicker..... 18c per lb					

BLACKING, STOVE. (See Polish) BLADES, SAW. <i>Butchers'.</i> Standard, 1 & 1 1/2-in. Net Clock Spring. " Star. " <i>Hack.</i> Atkins. 5% Star. Nets	<i>Well.</i> Oak, Wrought Iron Riveted Top Eais. per doz. \$8 00 BURRS, RIVETING. Copper Burrs only. 25% above list Tinnern's Iron Burrs only. 30%	Picture Chains. Light Brass, 3 ft. per doz. \$1 25 Heavy Brass, 3 ft. " 1 75 Sash Chain. (Morton's) Steel, per 100 ft. 0. \$2 50 2. 3 10 1. 3 60	<i>Saw K's.</i> Wentworth's, No. 1, \$12.50; No. 2, \$18.25. No. 3, \$16.25. CLAWS, TACK. Wood hdl. No. 10. per doz. \$0 95 Forged steel, wood hdl. \$1 75 Solid steel. " 2 40 Giant. " 40
<i>Wood.</i> Disston Nos. 6 66 26 \$8 00 \$8 50 \$8 00 Atkins Nos. 2 14 18 \$3 85 \$6 50 \$4 75	BUTTS. Cast Iron. 7 1/2% Wrought Brass (New List). Plus 5% Wrought Steel, Bright. 40% Wrought Steel, Japanned. Net prices	Champion Metal. 0R. 5 40 2R. 5 60 1R. 7 75 Champion Metal.—Extra Heavy. 1H. 9 50	CLEANERS. <i>Drain.</i> Iwan's Adjustable. 40% Iwan's Stationary. 30% <i>Pat.</i> Wire. per doz. \$0 75 Side-Walk. Steel. per doz., Net prices
BLOCKS. <i>Snatch.</i> Wooden. Plus 10% <i>Tackle.</i> Iron Strapped. Plus 10%	CALIPERS. Double. Nets Inside and Outside. " Wing. " CALKS. <i>Logger's Boot.</i> (Lufkin R. Co.'s), per M. \$7 00 <i>Toe.</i> Blunt and medium, 1 prong, per 100 lbs. \$6 20 Sharp, 1 prong, per 100 lbs. 6 70	Cable Sash Chains. Steel. List Net Plus 15% CHALK, CARPENTERS' Blue. per gro., \$1 40 Red. " 1 40 White. " 1 25 Common White School Crayon. " 25c	CLEAVERS. <i>Family.</i> Beatty's, inch 7 8 9 10 Per doz. \$27 00 29 00 33 00 36 00 CLEAVISES. Malleable. 10c lb.
BOARDS. <i>Store.</i> Wabash Crystal. Net Prices Wabash Oriental. " Wabash Mosaic. " Wabash Delft Enameled. " Wabash Art Inlay. " <i>Wash.</i> No. 760, Banner Globe, (single) per doz. \$5 25 No. 652, Banner Globe, (single) per doz. 6 75 No. 801, Brass King. 8 25 No. 860, Single—Plain Pump 6 25	CANS. <i>Milk.</i> Elgin. Gals. 5 8 10 Each. \$4 00 \$5 15 \$5 15 Iowa Pattern. Gals. 5 8 10 Each. \$4 00 \$5 15 \$5 15	CHARCOAL. In bags. per bag \$1.70 CHECKS, DOOR. Blount. Net list Corbin. " CHIMNEY TOPS. Iwan's Volcano. 35%	CLIPPERS. Bolt. \$2 25 & 6 00 CLIPS. Axle. 65 & 5% <i>Damper.</i> Standard. per doz. 70c Troy. " 36c Hame. " 50c
BOLTS. <i>Carriage, Machine, etc.</i> Carriage, 1/2 x 6 and sizes smaller, and shorter. 30% Carriage, sizes larger and longer than 1/2 x 6. 20% Machine, 1/4 x 4 and sizes smaller and shorter. 35-5% Machine, sizes larger and long- er than 1/4 x 4. 25-5% Stove. 70% Tire. 60% <i>Mortise, Door.</i> Gem, iron. 5% Gem, bronze plated. 5% <i>Barrel.</i> Cast. Nets Wrought. " Wrought, bronzed. " <i>Flush.</i> Wrought. " <i>Spring.</i> Wrought. " Wrought, heavy. " <i>Square.</i> Wrought. "	CAN OPENERS. See Openers. CAPS, GUN. See Ammunition. CARPET STRETCHERS. See Stretchers. CARRIERS. <i>Hay.</i> Diamond, Regular. each, Nets Diamond, Sling. "	CHISELS. <i>Box.</i> Inches. 1 1/2 14 Round, per doz. \$5 25 5 75 Flat, per doz. 7 25 8 25 <i>Cold.</i> Good quality, 1/2 in. and larger. Nets Smaller size, per doz. Nets Socket, Firmer. Ohio. Price on Application Socket, Framing. Ohio. Price on Application Tanged, Firmer.—Barton's. With handles. Net list Choppers, See Cutters, Meat.	CLOTH. <i>Emery.</i> Star. New Prices B. & A. " <i>Hardware, Wire—</i> Full rolls (100 ft.) Prices on 12 Mesh, galvanized. application 14 " " " " " 16 " " " " " 18 " " " " " Screen Wire. Prices on application. 12 mesh, painted, per 100 sq. ft.
BOXES. <i>Mail, No.</i> 2 4 10 Per doz. \$18 00 23 00 29 00 <i>Mine.</i> Stanley's. Net Prices Stearns, No. 2. per doz. \$30 00 BRACES. Fray's Genuine Spofford's. 20 & 10% " No. 08. \$7 50 " No. 010. 8 00 BRACKETS. <i>Hay Rack.</i> Wenzelmann's No. 1, per doz. sets. \$18 00 Wenzelmann's No. 2, per doz. sets. 19 20 <i>Shelf.</i> Wrought Steel. 40%	CARTRIDGES. See Ammunition. CASTERS. Standard—Ball Bearing. 50 & 10% Bed. 40% Common Plate. Brass Wheel. 15% Iron and porcelain wheels, new list. 50% Philadelphia Plate, new list. 50% Martin's. 40% CATCHERS, GRASS. No. 160S, per doz. \$12 25 No. 165S. " 14 01	CHUCKS, DRILL. Goodell's, for Goodell's Screw Drivers. List less 35-40% Yankee, for Yankee Screw Drivers. 6 00 CHURNS. Anti-Bent Wood, Gal. 5 7 10 Each. \$3 90 4 60 4 85 Belle, Barrel. 65 & 74% Common Dash, Gal. 5 7 Per doz. 17 00 19 00 Adjustable. Martin's. 30% No. 63, Screw. 20% Cabinet. Screw. 20% Carpenters'. Steel Bar. List price plus 25% Carriage Makers'. 2 1/2" per doz. \$7 00 3" 14 00 8" 28 00 12" 46 00 Quilt Frame. No. 30 Ball and Socket, 2 1/2" head. per gross \$11 25 No. 50, Ball and Socket, 3 1/2" head. per gross 12 25 Hose. Sherman's, brass, 1-in. per doz. 48c Double, brass, 1-in. 1 20	COLLARS, STOVE PIPE. <i>Lacquered.</i> Inches 5 6 7 Fancy pattern, per doz. 80c 85c \$1 15 COMPASSES. Carpenters'. 15% COPPER—See Metals. COPPERS—Soldering. Pointed Roofing 3 lb. and heav. per lb. 37c 2 1/2 lb. " 38c 2 lb. " 37c 1 1/2 lb. " 40c 1 lb. " 43c Picture. White Wire. 60 & 5% Sash. Sampson Spot, No. 7, per doz. \$24 50 Sampson Spot, No. 8, per doz. \$29 40 CORKSCREWS. Walker's. 30% Williamson's Regular. 35 & 11% Williamson's Forged Worm. 40% COTTERS, SPRING. All sizes (new list) 80% COUPLINGS, HOSE. Brass. per doz. \$2 25 COVERS, WAGON—See Tents. CRADLES, GRAIN. Morgan's Grapevine. per doz. \$45 00

CRAYONS—See Chalk.		ELBOWS—Conductor Pipe.		Wood Pails.		HANGERS.	
CUTTERS		Galvanized Steel, Tin and Terne.		Hub Lightning, 15 lb. 90c; 25 lb. \$1.21 each.		Barn Door.	
Glass.		Size.		Tin Cans.		U. S. Rolled Bearing.....12 1/2%	
Woodward.....40%		Doz.		Prazer's		Matchless.....12 1/2%	
Meat.		2-inch.....40%		1 1/2 lb. per doz.....\$1 75		Warehouse Tandem, No. 44.....33 1/2%	
Enterprise—Nos. 5 10 12		3-inch.....65%		3 lb. per doz.....3 25		Conductor P.	
Each \$2 50 \$4 25 \$3 75		4-inch.....65%		Iwan's Perfection.....45%		Eave Trough.	
Nos. 22 32		5-inch.....65%		All sizes, 5" or smaller,	per gross. \$3 80 Net	
" 6 50 8 50		6-inch.....65%		All sizes, larger than 5",	per gross. 5 00 "	
Pipe.		EMERY, TURKISH.		GRINDSTONES.		Garage Door.	
Saunders', No. 1 2 3		Size.....1-lb. 5-lb. 10-lb.		Family.		Right Angle.....50&10%	
Each \$1 85 2 75 6 75		Per pound.....18c 14c 13c		Inches.. 7 8 10 12		Sliding Folding.....50%	
Slaw and Kraut.		EYES.		Per doz..20 50 21 75 26 25 30 50		Receding.....50%	
4-knife Kraut.....\$20 00-55 00		Bright Wire Screw—See Ooods, B. W.		Per ton.....Price on application		Parlor Door.	
3-knife Kraut, 8x27 in.. 13 00-18 00		Drifting Pick.....60, 10&5%		Mounted.		Acme.....per set, \$3 75	
1-knife Slaw.....2 50		Hooks and Eyes—		Ball Bearing.... 1 2 3		Ives' Improved....." 3 40	
2-knife Slaw.....3 00		Brass, 1 1/2" No. 60..per gross. \$3 50		Each.....\$4 75 5 00 5 25		Lane's Standard....." 3 50	
Washer.....11 00		Iron " " 50.. " 1 60		GUN WADS.		Lane's New Model... " 3 10	
DAMPERS, STOVE PIPE.		FASTENERS, STORM SASH.		(See Ammunition).		Le Roy Noiseless.....40&10%	
Ideal		Shroeder's.....per doz. \$1 50		GUNS.		Richards.....25%	
3".....\$1 00		Sensible....." 3 00		Iver Johnson Champion Single		Advance.....40&10%	
4".....1 05		FILES AND RASPS.		Barrel Shot Guns.....Net Prices		HASPS.	
5".....1 15		Delta		Double Barrel, Hammerless....."		Hinge, Wrought.....Add 50% to list.	
6".....1 25		Delta		HATCHETS.		With Staples—See Staples.	
7".....2 20		Swiss.....List plus 25%		Brad.		Crescent.....50%	
8".....3 75		Utility....." net.		Common.....per doz. \$0 35		Cast Claw.....per doz. \$1 50@1 85	
10".....6 00		Nicholson's—		Peg.		Cast Shingling... " 1 50@1 85	
DIES AND STOCKS.		American.....60%		Patent, plain top.... " 80		Germantown.....74%	
Discount.....New List		Arcade.....50-10-74%		Patent, leather top... " 90		See Knives.	
DIGGERS.		Black Diamond.....50&5%		Sewing.		HAY RACK BRACKETS	
Post Hole.		Eagle.....50-10-74%		Common....." 24		Wenzleman's No. 1 per doz. sets, \$18 00	
Eureka.....per doz. \$14 50		Great Western.....50-10-74%		Patent....." 55		Wenzleman's No. 2 " " 19 20	
Iwan's Split Handle (Eureka)		Kearney & Fool.....50-10-74%		HAMMERS, HANDLED.		Blind.	
4-ft. Handle.....per doz. 15 00		McClellan.....50-10-74%		Blacksmiths, Hand, No. 0, 26 oz. \$11 11		Clark's Gravity	
7-ft. ".....20 00		Nicholson brand.....50&74%		Engineers', No. 1, 26 oz. 11 11		No. 1.....per doz. sets, \$2 25	
Iwan's Hercules pattern " 16 50		J. Barton Smith.....50&24%		Farriers', No. 6, 7 oz. 7 23		No. 3....." " 5 75	
Iwan's Hercules pattern " 18 00		X-F Swiss Pattern.....Net list.		Machinists', No. 1, 7 oz. 6 65		Gate.	
See also Augers—Post Hole.		Simonds'.....50%		Nail.		Clark's.....2 3	
Dividers, Wing.....25%		Disston's.....50&10%		Vanadium, No. 41 1/2, 16 oz.,		Hgs & Litch, doz. \$5 50 7 00 9 75	
DOOR CHECKS—See Checks.		Heller's.....60&10%		per doz.....\$17 50		Hinges only " 4 75 5 50 8 00	
DOORS, SCREEN.		FORKS.		V. B., No. 11 1/2, 16 oz. per doz. 13 95		Latches only. 1 90 1 90	
1-in. 4-panel, painted.....Net Prices		Barley.		Garden City, No. 11 1/2, 16		Screen Door.	
1 1/2-in. 4-panel, painted.....		Steel, new list.....New Prices		oz., per doz. 11 90		Cast Iron.....gross \$10 00	
1 1/2-in. 3-panel, natural pine,		Hay.		Tinner's Riveting, No. 1, 8 oz.,		Steel....." 7 00	
fancy....."		2-tine.....New prices		per doz. 9 40		Spring.	
DOOR HANGERS—See Hangers.		3- ".....New prices		Shoe, Steel, No. 1, 13 oz. per doz. 10 00		Chicago.....Add 12 1/2% to list.	
DRILLS.		4- ".....New prices		Tack.		Columbia Dbl. Acting...40&10&5%	
Blacksmiths' Twist. (New List)....40%		Scoop.....New prices		Magnetic.		Gem.....25%	
Breast.		Header.		Per doz.....\$5 63		Ideal Detachable...per gro. \$11 00	
Millers Falls No. 12....Each, \$46 00		3-tine.....New prices		HAMMERS, HEAVY.		Matchless.....40%	
" " " 112....26 00		4- ".....New prices		Heavy Hammers and Sledges.		New Idea.....per gro. \$7 20	
Hand.		Manure.		Under 5 lbs.....50%		Oxford.....20%	
Goodell's Automatic.		4-tine.....New prices		5 lbs. and over.....50&10%		Wrought Iron.	
Nos. 01 03		FREEZERS—ICE CREAM.		Masons'.		New Lists.	
Per doz. 12 00 14 40		White Mountain 1-quart.@		Single and Double Face.....50%		Light Strap Hinges.....5&5%	
Goodell's Single Gear, per doz. 15 75		" " 2 ".....@		Handles.		Heavy Strap Hinges.....20&7 1/2%	
list, less.....30%		" " 4 ".....@		Auger.		Light T Hinges.....List plus 5%	
Goodell-Pratt No. 4 1/2 per doz.		" " 6 ".....@		Common Assorted....per doz. \$0 75		Heavy T Hinges.....List plus 45%	
list, less.....30%		Arctic.....1 ".....@		Pratt's Adjustable, Nos. 1 & 2,		Extra Heavy T Hinges...15&5%	
Reciprocating.		" " 2 ".....@		per doz. 6 00		Screw Hook and Strap.	
Goodell's.....per doz. 26 00		" " 4 ".....@		Ives' Adjustable.....per set, 1 35		6 to 12 in.....per 100 lbs. \$7 75	
DRIVERS, SCREW.		" " 6 ".....@		Axe.....30%		14 to 20 in....." 7 50	
Standard.....Nets		GAUGES.		Chisel.		22 to 36 in....." 7 25	
Lock Ferrule....."		Cream Pail.		Hickory, Tanged, Firmer, Assorted,		Screw Hook and Eye.	
Champion....."		Fairmount.....per doz. \$3 75		55c; Large, 85c per doz.		1 in.....per doz. pair \$2 60	
Champion Pattern....."		Marking, Mortise, etc.....		Hickory, Socket Firmer, Assorted,		1 in....." 3 50	
Clark's Interchangeable....."		Wire.		70c; Large size, 80c per doz.		1 in....." 5 00	
Edison....."		Disston's.....25%		Coal Pick.....40%		HOES.	
Reed's Lightning....."		GIMLETS.		Drifting Pick.....40%		Garden.....Net	
Goodell's Spiral....."		Discount.....35@40%		File, assorted, 30c; Large, 35c per doz		Grub.	
Yankee Ratchet....."		GLUE.		Hammer.		Extra.....New prices	
" Spiral....."		Bulk.		Adze Eye.....per doz. 40 to \$1 00		Hazel.....per doz. New prices	
EAVES, TROUGH.		Liquid.		Blacksmiths'.....45c@1 00		Ladies' and Boys'.....New prices	
60-5% off Standard List.		Army & Navy.....40%		Machinists'.....50c@1 00		Mortar.....New prices	
ELBOWS—Stove Pipe.		Le Page's—		Hay and Manure Fork.....25%		Planter's Eye.....New prices	
1-piece Corrugated, Uniform.		List "A".....37 1/2%		Screw Driver.		Weed.....New prices	
5-inch.....Doz		List "B".....33 1/2%		Assorted....." 60		HOOKS.	
6-inch.....1 90		List "C".....25 %		Large....." 90		Awning, * No. 60.....per sq. ft. 50%	
7-inch.....2 20		GREASE, AXLE.		Shovel and Spade.....25%		Belt.	
Uniform, Collar Adjustable		Wood Boxes.		See Stops, Bench.		Brown's.....70&5%	
5-inch.....Doz		Frazer's.....per gro. \$13 00				Jones'.....65&5%	
6-inch.....2 4c		Hub Light.....7 50					
7-inch.....2 75							

Box.					
Inch.....	5	7	10	12	
Per doz....	\$2 50	2 75	3 25	3 85	

Bush.
Common Axe Handle, per doz. \$22 00

Chain.					
Inch.. 1&1/4	1	1 1/2	1 3/4	2	
Pr 100	\$7 60-8	10 9	75 11	50 12	60

Clothes Line.
Japanned.....per doz. 48c @ 1 40
Galvanized....." 75c @ 2 50

Coat and Hat.
Common Wire.....per gro. 1 25-1 65

Conductor.
Iwan's Tinned Sickle.....List.

Corn.
Common, riveted, painted
red.....per doz. Nets
Little Giant....." "

Gate.
See Goods, Bright Wire.

Grass.
Common Nos. 1 3 5 7
Per doz....\$4 50 3 50 3 75 3 25

Hammock.
With plate.....per doz. 1 10
With screw....." 1 00

Lambrequin, or Drapery, per gro....30c
Picture.....50% @ 50 & 10%

Potato and Manure.....Nets
Screw.....70%

(See Goods, Bright Wire.)

Seat Spring.....per lb. 5c

HOSE, GARDEN.

Per ft.
Guaranteed 3 ply 1/2 inch.....16 c
" 4 ply 1/2 inch.....18 1/2 c
" 5 ply 1/2 inch.....13 1/2 c

COTTON COV. RUBBER HOSE.
High Grade Apache 1" guar. press.
400 lb.....40c

HUSKERS.

Boss.
Nos.....B E
Per doz.....New Nets
No. 59.....per doz. New Nets

IRON, PIG.

See Metals.—First column.

IRONS.

Curling.
C.....per doz. \$4 40
B....." 50
A....." 58
Princess....." 1 25
Thelma....." 1 25
Pinking....." 1 00

Plane.
Wood Bench.....Add 10% to list

Sad.
Charcoal.....per doz. \$11 00
Common, polished, per 100 lbs. 7 75
No. 70 Asbestos.....\$1 50 net
No. 100....." 1 75 net
Common, nickel plated.....8 25
Mrs. Pott's.
No. 50 J, Enterprise, per set, Nets
No. 55 J....." "
No. 50 T....." "
No. 55 T....." "
Tailors' Sad.....per lb
Tailors' Goose....." "

Ideal.
6 lb. Household.....\$3 50
9 lb. Dressmakers.....4 25
14 lb. Tailors' Goose.....5 50

Tweezers.
Single Duck Nest.....per doz. \$5 25
Double Duck Nest....." 6 25
Sutton.....each 2 60

JACKS.

Locomotive.....30%

Wagon.
Richard's No. 1.....per doz. \$15 50
Miller....." 20 00

Oliver.
Nos.....0 00
Each.....\$0 60 \$0 80

Standard, Nos.....	1	2
Each.....	\$0 60	1 00
R-W		
Big Lift.....	40%	
Tiger.....	40%	

KETTLES.

Brass.....15%
Cauldron.....40&5%
Copper.....per lb. 27
Maslin.....40&10%
Sugar.....50%

KNIVES.

Beet Topping.
Clyde, 9-in. Scimitar Blade, da. \$3 85
California....." 3 40
Butcher.....Per doz.
Beechwood Handles, 6" blade..\$4 00
" " 7" " 4 65
" " 8" " 5 65
Cooper's Hoop.....15%

Corn.
Clipper.....per doz. \$1 75
Diston's....." 2 75
Earle's....." 3 00
Woodford....." 2 25

Drawing.
Standard.....(New List) 15%
Adjustable.....15%
Barton's Carpenters.....15%

Hay.
Iwan's Solid Socket.....doz. \$13 00
Heath's....." 13 00
Iwan's, Sickle Edge....." 15 00
Iwan's, Impv'd Serrated....." 15 50

Hedge.
Challenge.....per doz. \$6 00
Diston's....." 3 75

Mincing.
Common, Single....." 60
Common, Double....." 90
Streeter, 4-blade....." 1 30
Streeter, 6-blade....." 2 00

Pully.
Common.....per doz. \$0 75 @ 1 50
Lander's....." 1 75 @ 2 50

Scraping.
Beech Handle.....90 @ 1 10
Lander's....." 5 50 @ 6 50

KNOBES.

Doors.
Mineral.....per doz. \$2 10
Porcelain....." 2 20
Jet....." 2 20

LADDERS.

Common Long.
Per ft.....17c @ 23c
Extension.
Per ft.....22 to 28
Step.
Common, per ft.....23c
Common, with Shelf, add 10c.
IXL.....34c
Challenge, 6 to 9 ft.....55c
10 to 16 ft.....60c

LANTERNS.

Bull's Eye Police.
3-in. Flash Light.....per doz. \$13 00

LEADERS, CATTLE.

Nos.....51 52
Per doz.....\$1 35 1 45

LEATHER, LACE.

Rawhide 1/2".....100 ft. \$3 00
" 1"....." 4 40

LEATHERS, PUMP.

Valve and Plunger.....10%

LIFTERS.

Stone Cover.
Coppered.....per gro. \$3 25 @ 5 50
Alaska....." 8 00
Alaska....." 10 00
Transom.
Payson's.....55%

LINES.

Chalk.
Twisted in 20-ft. hanks.
Nos. 4 6 7 8 9
Gro.....Prices on Application
Twisted in 50-ft. balls.
Nos.....1 2 3 4
Per doz.....Prices on Application
Braided in 20-ft. hanks.
Nos.....0 1 2 3
Per doz.....Prices on Application
Mason's....."
Clothes.
40 ft. Jute.....per doz. \$0 95
60-ft. Sisal....." 40
50-ft. Cotton....." 15
50-ft. Braided Cotton....." 25

LINING, STOVE.

Bricks.....per crate, 42c

LOCKS.

Barn Door.
No. 60 Stearns.....per doz. \$10 00
No. 80 "....." 17 50

MACHINES.

Riveting.
Stearns No. 1.....per doz. \$12 00

Tenoning.
No. 50 Peace's Spoke.....each \$11 50

MAIL BOXES.

See Boxes.

MALLETS.

Carpenters'.
Fibre Head, No. 2, per doz. \$16 50
" No. 3 " 19 50
" No. 4 " 28 50
Round Hickory.....\$3 00-5 00
" Lignumvitae....." 6 25-10 50
Square Hickory....." 3 50-5 50
" Lignumvitae....." 8 00-12 00

Finners'.
Hickory....." 2 25

MATS.

Door.
National Rigid.....50&10&5%
Acme Steel Flexible.....50%

Use.
No. 2.....per gro. Nets
No. 1....."
No. 1 Asbestos Toasters, or
wire-covered Stove Mats,
with handle.....per doz. 1 10
No. 2 Asbestos Toasters, with
ring.....per doz. 60

MATTOCKS.

Plumbs.....25%

MAULS.

ron, lbs. 10 13 16 18
Per doz.....Prices on Application
Wood Face, lbs. 10 12 14
Per doz.....Prices on Application
Wood Choppers'.
Lake Super'r & Oregon Pat. 40&5%

MEASURES.

Galvanized, doz.....Nets
Japanned, doz.....Nets

MILLS, COFFEE.

Enterprise.....161%
Parker.....50&5%
Arcade.....40-10%

MITRE BOXES.

See Boxes.

MOPS.

Cotton. Star (Cut Ends).
Pounds 12' 15' 18' 24'-3 oz.
Per doz. \$4 50 5 65 6 75 9 00

MOWERS, LAWN.

Gladiator—B. B.
Inches.....16 18 20
Each.....\$6 50 7 25 8 00
King Universal—B. B.
Each.....\$5 25 5 75 6 00
Inches.....14 16 18
Big Giant.....\$3 50 3 90 4 25

NAILS.

Cut Steel.....Prices on Application
Cut Iron....."
Wire.
Small Lots.....Prices on Application
Cement Coated.
Small Lots.....Prices on Application

Horseshoes.
Ausable.....55&5%
Capewell.....15%
Perfect.....55&5%
Putnam.....20&5%
Star.....30&5%

Picture.
Brass Heads.....25%

Brads.....50&5%

Furniture.....List plus 15%

NAIL PULLERS.

See Pullers.

NAIL SETS.

See Sets.

NETTING, POULTRY.

Galvanized before weaving.....30%
Galvanized after weaving.....45%

NIPPERS.

End Cutting.
Stubb's Pattern, Inches. 5 6
Per dozen.....\$4 65 6 75

End and Diagonal Cutting.
Swedish Side. Inches. 5 6
Per dozen.....\$4 50 5 75

Hoof.
Heller's.....40&10%
V. & B.....55&5%

NOZZLES.

Hoss.
Magic.....per doz. \$9 50
Diamond....." 5 75

NUTS, HOT PRESSED.

Square Tapped.
\$1.85 off per 100 lbs.
Hexagon Tapped.
\$1.85 off per 100 lbs.

OILERS.

Chase Pattern.
Brass and Copper.....10%
Zinc.....334%
Engineers'.
Tin.....per doz. \$7 00 @ 9 00
Machine.
Common.....per doz. \$0 85

OPENERS.

Box.
See Box Chisels
Can.
Delmonico.....per doz. \$1 30
Never Slip....." 65
Crate.
V. & B....." 7 25-11 00

OUTFITS, COBBLING.

Combination.....per doz. \$16 00
Economy....." 8 50
Family....." 14 50

PAIS.

Cream.
14-qt., without gauge, per doz. \$9 50
18-qt., " " " 11 00
20-qt., " " " 11 75

Sap.
10-qt., IC Tin.....per doz. \$4 00
12 " " " 5 50

Stock.
Galv'd. qts. 14 16 18 20
Per doz. \$9 75 10 75 12 75 14 50

Water.
Galvanized, qts. 10 12 14
Per doz. \$3 75 6 50 7 25

Wood.
Cable, 2-Hoop.....per doz. Nets
Cable, 3-Hoop....." Nets
Cedar, 3-Hoop, brass....." Nets

PANS.

Dripping.....Net

Fry.
Common.....Nets
Acme....."

Roasting.
Paxton.
Nos. 1 2 3 4
Per doz.....Nets
Neverburn....."
Savory No. 200.....per doz. \$8 40

PAPER.

Building.
Plain.....per 100 lbs. \$1 40
Tarred....." 1 40
Tarred Felt....." 1 40
Red Rosin, per ton.....\$75 00

Sand and Emery.
No. 1, per ream, best grade....\$5 40
No. 1, per ream, cheaper grade. 4 85

Wrapping.
Express.....100 lbs. Nets

PARERS		FINNERS.		PUNCHES.		SAWS.	
Apple.		Hollow.....Net list		Conductors.		Band.	
Goodell's.....per doz. \$10 40		Solid.....each, 10c		No. 22.....per doz. \$3		E. C. Atkins & Co. Prices on applic'n	
Turntable....." 11 10		PLUMBS AND LEVELS.		Machine.....per lb.		Disston's.....Prices on applic'n	
White Mountain....." 8 40		Common.....Nets		Saddlers'.		Buck.	
Reading, No. 78....." 11 40		Cook's.....40%		Common.....per doz. 1 50 to 5		Disston's.....Prices on applic'n	
Potato.		Davis' Iron.....25%		Revolving Spring.		Jackson's.....New nets	
Goodsell's Saratoga, 10 1/2 in., ds. 6 50		Davis' Inclinator.....15%		Stearns, No. 10.....per doz. \$ 6		Butchers'.	
Goodsell's Saratoga, 5 in., ds. 5 50		POINTERS, SPOKE.		" No. 40....." 12		E. C. Atkins & Co. Prices on applic'n	
PICKS.		Stearns' No. 1.....per doz. \$ 8 00		" No. 60....." 16		Disston's.....Prices on applic'n	
Adze Eye Ore.....22 1/2%		POKERS, STOVE.		PUTTY.		Hiles'.....New nets	
Drifting and Foll Picks.....22 1/2%		Wr't Steel, str't or bent per doz. \$0 75		Strictly pure.....per 100 lbs. \$4		Compass.	
Plumbe, Railroad.....22 1/2%		Nickel Plated, coil han's " 1 10		RAIL.		E. C. Atkins & Co. Prices on applic'n	
Surface.....22 1/2%		POLISH.		Barn Door.		Disston's.....Prices on applic'n	
PINCERS.		Wizard, 6 oz.....per gross \$18 00		Matchless, 1-in.....		Coping.	
Carpenters', cast steel.		" 1 pt....." 20 40		Matchless, 1 1/2-in.....		E. C. Atkins & Co. Prices on applic'n	
Inches... 6 8 10 12		" 1 qt....." 36 00		Storm King.....		Disston's.....Prices on applic'n	
Per doz. \$3 75 4 75 6 25 7 00		" 1 gal....." 10 80		Sliding Door.		Cross-Cut.	
Blacksmiths.....45%		" 1 gal....." 18 60		Bronzed wrought iron...per ft. 8 1/2		E. C. Atkins & Co. Prices on applic'n	
Heller's.....40%		PINS.		RAKES.		Disston's.....Prices on applic'n	
Clothes.		Common....per box of 5 gro. \$0 95		Steel, Bow, 12-inch Teeth....\$8		Dehorning.	
Picket		PIPE.		Steel, Bow, 14-inch.....9		Disston's.....Prices on applic'n	
Fluted, 15-in.....per doz. \$1 10		Plain Round and Round Corrugated		Malleable Iron, 12-in.....4		Flooring.	
Fluted, 21-in.....1 60		29 Gauge.....65%		Malleable Iron, 14-in.....5		E. C. Atkins & Co. Prices on applic'n	
Spiral.....1 90		28 ".....55%		Hay.		Disston's.....Prices on applic'n	
Conductor.		26 ".....45%		Wood, 10 Teeth.....\$4 00		Hand and Rip.	
Plain Round and Round Corrugated		24 ".....20%		Lawn.		E. C. Atkins & Co. Prices on applic'n	
29 Gauge.....65%		Square Corrugated A and B and Octagon.		20 Teeth.....per doz. \$5 50		Disston's.....Prices on applic'n	
28 ".....55%		29 Gauge.....50%		RASPS—See Files.		Keyhole.	
26 ".....45%		26 ".....35%		RAZORS—SAFETY.		E. C. Atkins & Co. Prices on applic'n	
24 ".....15%		Galvanized Toncan Metal, Genuine		Gillette.....per doz. \$45 00		Disston's.....Prices on applic'n	
O. H. Iron, Lyonore Metal, Charcoal Iron and Keystone C. B.		Plain Round and Round Corrugated		Auto Strop.....45 00		Miter Box.	
28 Gauge.....50%		28 Gauge.....50%		Gem.....8 40		E. C. Atkins & Co. Prices on applic'n	
26 ".....40%		26 ".....15%		Gem (3 doz. lots).....8 00		Disston's.....Prices on applic'n	
24 ".....15%		Square Corrugated A and B Polygon and Octagon.		Ever Ready.....8 00		Panel.	
28 Gauge.....45%		28 Gauge.....50%		Ever Ready (3 doz. lots).....8 00		E. C. Atkins & Co. Prices on applic'n	
26 ".....35%		26 ".....15%		RAZOR STROPS.		Disston's.....Prices on applic'n	
24 ".....15%		14 and 16 oz. Copper, all designs..20%		Star (Honing).....50%		Pruning.	
Portico Elbows.		FIRE POTS.		REGISTERS.		Disston's.....Prices on applic'n	
Galvanized and Terne Steel.		Clayton & Lambert's, each \$4 00@6 00		Cast Iron.....10%		Saw Buckles—See Bucks.	
1 1/2-in.....45%		Gate City.....each, 6 25		Steel and Semi-Steel.....20%		SAW SETS—See Sets	
1 1/4-in.....45%		Gem.....each, \$6 75@8 50		Solid Brass or Bronze Metal prices on application.....20%		SAW TOOLS—See Tools.	
2-in.....45%		POWDER.		REGISTER FACES.		SAW FRAMES.	
Tubing.....40%		See Ammunition.		Japanned, Bronzed and Plated.		Common, plain.....per doz. \$1 50	
Discounts on Round apply on sizes 2 inch to 6 inch inclusive.		PRESSES, FRUIT AND JELLY.		4x6 to 14x14.....20%		Common painted....." 2 10	
Freight allowed on 15 dozen or more Less than 15 dozen F. O. B. Factory		Enterprise Manufacturing Co....25%		14x14 to 38x42.....40%		SCALES.	
Terms: 30 days net, 2% ten days.		PRIMERS.		REVOLVERS.		Counter.	
Standard Gauge Conductor Pipe, plain or corrugated.		See Ammunition.		Iver Johnson Safety Automatic Hammer.....New Nets		Pelouze.....40&10%	
Not Nested.....45-5%		PRUNERS.		Hammerless....."		SCISSORS.	
Nested solid.....50% off		Disston's Pole.....per doz. \$18 00		L. J. Model 1900....."		Star.....60%	
Stove.		Water's Improved.....60%		RINGS AND RINGERS.		SCOOPS.	
29-Gauge, 3-inch.....per 100 Joints \$16 00		PULLERS.		Blair's Rings.....per doz. \$ 75		Grain.	
" 4-inch.....16 50		Daisy.....each, \$3 10		Blair's Ringers.....1 00		1/2 bu. "Hercules".....per doz. 3 70	
" 5-inch.....17 25		Phoenix....." 1 40		Copper.....2 1/2-in. 3-in. \$2 75 \$3 2		1-bu. "Hercules"....." 5 00	
" 6-inch.....18 00		Quick and Easy....." 2 70		Per doz.....		SCRAPERS.	
" 7-inch.....20 00		Nail.		Rea's Improved Self-Piercing copper, doz. 3 40		Triangular, No. 6.....per doz. \$6 25	
T-Joint Made-up.		Giant.....per doz. 14 50		Steel, per doz.....1 50 1 80		SCREEN DOOR HINGES.	
6-inch.....per 100 \$50 00		Never-Slip....." 17 00		RIVETS.		Cast iron.....gross, \$13 00	
Furnace Pipe.		PULLEYS.		Copper Belt.....Add 15% to list		Steel....." 9 50	
Double Wall Pipe and Fittings 25%		Awning—Jap'd.....10%		Coppered Iron.....30%		SCREWS.	
Single Wall Pipe, Round Pipe Fittings.....25%		Clothes Line.....10%		Tinners'.....30%		Bench.	
Galvan'd and Black Iron Pipe, Shoes, etc.....20%		Hay Fork.		Home.....per lb. \$0 17		Iron, ins. 1 1 1/2 1 3/4 1 1/2	
PLANES.		Iron Wheel, 5-in.....per doz. 2 50		Slotted Clinch.....per doz. 60c@1 10		\$9 75 11 50 13 75 21 50	
Stanley Iron Bench.....net		Wood Wheel, 6-in....." 2 65		Tubular.		Wood, white maple.....per doz. 6 00	
PLATES, TIN.		Wood Wheel, 6-in., pass knot,.....per doz. 3 00		Nos. 1 and 2 assorted sizes, 50 in box.....doz. 75c		Hand—Wood.....35%	
See Metals in Column 1.		Sash.		Nos. 1 and 2 assorted sizes, 10 in box.....doz. 1 40		Hand Rail.....22 1/2%	
PLIERS.		Common.....Net		RIVET SETS.		Jack.....33 1/2%	
Giant, Button's—Nets		Common-Sense, 2-in.....Net		See Sets.		Lag or Coach—all sizes, gimlet pointed.....45-5%	
Cutting.		Empire Pattern, 2-in.....Net		ROPE.		Saw—Centennial.	
Bernard's.....New Prices		Ideal.....Net		1, 5-16 in. Com. on reels, per lb.....85c		Nos.....1 2 3 4	
Lodi.....New Prices		Steel.....Net		1, 5-16 in. Com. in coils.....85c		Per doz.....47c 55c 75c 90c	
Paragon.....New Prices		PUMPS.		Sisal		Wood.	
Fencing.		Pitcher Spout.		1st Quality.....20c		F. H. Bright.....70-10-10%	
Black Bull.....All Nets		Nos.....1 2 3 4		No. 2.....17 1/2c		R. H. Blue.....65-10-10%	
Farmers' Choice.....All Nets		Spray.		Pure Manila.		F. H. Jap'd.....62-10%	
Russell's.....All Nets		Midget Junior.....per doz. 3 75		1st quality, base.....per lb. 25 1/2c		P. H. Bram.....42-10-5%	
Flat and Round Noss.		New Misty....." 6 00		Hardware Grade.....per lb. 24 1/2c		R. H. Bram.....40-10-5%	
Bernard's.....New Prices		Crescent....." 6 50		RULES.		R. H. Nickel Plated.....57-10%	
Lodi.....New Prices				Prices on application		SCYTHES.	
Paragon.....New Prices				Lufkin's Hickory Board.....		Clipper, Grass.....per doz. \$13 50	
				Lufkin's Log.....		Honest Dutchman....." 13 70	
				Lufkin's Boxwood.....			
				Lufkin's Zigzag.....			

SETS.		SQUARES.		TAPES, MEASURING.		WARE.	
Nail.		Steel and Iron.		Asses' Skir.		Glass Pots.	
Square head..... per doz. \$1 25		(Add, for bluing, \$3.00 per doz., net.)		Lufkin's Steel.		Tinned..... Add 15% to list	
Cup point, knurled.. " 1 15		Mitre.....		Lufkin's Metallic. List to list plus 20%		Enameled..... 30%	
Rivet.		Try.....		Lufkin's Pocket..... 10%		WASH BOARDS—See Boards.	
Farmers'..... per doz. \$2 10		Try and Bawl.		HERMOMETERS.		WASHERS.	
Tinners'..... 25%		Try and Miter.		In Case..... per doz. 80c@ \$ 1 25		Standard O. G. cast iron..... per lb. 3½c	
Saw.		Fox's..... per doz. \$6 00		Wood P..... " \$2 00@ 12 00		Wrought steel in 5-lb. boxes, per lb.:	
Aiken's Pattern..... per doz. \$6 50		Winterbottom's..... 10%		Blas..... " 12 00		In. 3/16 1/2 5/16 3/4 1 1 1/4 1 1/2 1 3/4 2	
Disston's Monarch... " 7 20		SQUEEZERS, LEMON.		TIES.		18c 16c 15c 13c 12c 11½c 11c 11c 11c	
Disston's X-Cut..... " 13 50		Common Wood..... per doz. \$0 7c		Single pop. carload lots..... 75&7%		WEDGES.	
Leach's..... " 80		Porcelain Lined, Wood..... " 1 25		less than car lots 70&15%		Ax..... per doz. Nets	
Nash's Hand..... " 3 15		Boas, malleable iron..... " 1 20		Low—See "Chains."		Galling..... per lb. "	
Nash's X-Cut..... " 4 20		Iron frame, porc'n bowl..... " 1 90		TOOLS, SAW.		Saw..... " 8½	
Stillman's Lever..... " 1 30		Iron Frame, glass bowl..... " 2 35		Disston's Universal..... 40%		WEANERS.	
Stillman's X-Cut..... " 2 50		Little Giant, tin'd iron.. " 4 00		Traps.		Calif.	
Whiting Pattern, No. 21 " 5 75		Drum, japanned..... " 3 60		Same with Chains.		Fuller's, per doz. \$2 00 to \$2 50	
Eccentric Anvil, Hand, No. 395, N. P. Morrill Pattern, " 11 50		Drum, nickel plated.... " 4 50		Victor No. 1..... \$1 65		Tyler's Safety, per doz. 1 85 to 2 40	
SHARPENERS, SKATE.		Blind.		Oneda Jump No. 1..... 2 25		Carroll's, per doz. 3 00 to 3 75	
Diamond..... per doz. \$1 60		Barbed..... per lb. 21@ 22c		Newhouse No. 1..... 3 85		Hoosier, per doz. 3 50 to 4 60	
Perfect..... 1 20		Butter Tub..... " 16@ 19c		Mouse and Rat.		Shaw Perfected..... 3 00 to 3 75	
SHEARS.		Fence—		Net per gross		WEIGHTS.	
Per Doz.		Polished..... per 100 lbs. \$5 45		Out O'Sight Mouse..... \$ 8 00		Fitching..... per lb. Nets	
Nickel Plated, Straight, 6".... \$11 50		Galvanized..... " 6 15		" " Rat..... 15 00		Sash—f.o.b. Chicago	
" " " 7".... 12 95		Netting.		" " Mole..... 100 00		Ton lots, per ton..... \$60 00	
" " " 8".... 14 40		Wrought.		#44 Pocket Gopher..... 20 00		Smaller lots, per ton..... 63 00	
Japanned, Straight 6".... 10 25		Wrought Staples, Hasps and		Victor Mouse..... 2 60		WHEEL BARROWS.	
" " " 7".... 11 50		Staples, Hasps, Hooks and		Hold Fast Mouse..... 2 60		No. 4 Tubular Steel..... @ \$7 25	
" " " 8".... 12 80		Staples, and Hooks and		Victor Rat..... 11 00		Common Tray or Stave Tray @ 2 75	
Tinners'—See Snips.		Staples.....		Official Rat..... 13 50		Angle leg, garden..... @ 4 75	
SHEAVES, SLIDING DOOR.		Extra heavy..... 35%		Wood Choker Mouse, 4 Holes 11 00		WHEELS.	
Common.		STEELYARD.		TROWELS.		Carborundum..... 50%	
Inches.... 3 4 5		Discount 25%.		Trick.		Emery..... 60%	
Per set..... \$1 40 1 75 2 40		Ax.		Clover Leaf..... 30%		Well, Ins..... 8 10 12	
Hatfield's.		Hindostan..... per lb. New Nets		Brade's..... 15&5%		Per doz..... \$5 50 7 25 8 50	
Per set..... \$1 80 2 10 2 75 25		More Crit..... " "		Disston's..... 30%		12 in. heavy hoisting, per doz. \$25 00	
SHELLS—See Ammunition.		Washita..... " "		Rose's..... Net		WIRE.	
SHELLERS, CORN.		Emery.		Plasterers.		In coils..... Nets	
Union..... per doz. \$6 75		No. 126..... per doz. New Nets		Clover Leaf..... 40%		In 1-lb. spools, new list..... Nets	
SHIELDS.		Oil—Mounted.		Disston's..... 25%		Broom—Tinned..... Nets	
Expansion Bolt Shields..... 60%		Arkansas Hard No. 7 per doz. New Nets		W. & McP..... Net		Cable—Same price as Barbed Wire.	
SHOES.		Arkansas Soft..... " "		TRUCKS.		Copper.	
Conductor..... 60%		Washita No. 717... " "		each, \$3 75		In coils..... Nets	
SHOT—See Ammunition.		Oil—Unmounted.		Warehouse or store.		1-lb. spools, new list..... Nets	
SHOVELS AND SPADES.		Arkansas Hard..... per lb. New Nets		No. 1, each..... \$24 50		Fence—Smooth.	
Coal.		Arkansas Soft..... " "		" 2, "..... 22 50		An'eal'd Galv'd	
No. 2, Woodford..... per doz. \$5 50		Lily White..... " "		TUBS, WASH.		Nos. 6 to 9, less than	
No. 182..... 6 00		Queer Creek..... " "		Standard, Wood.		car, per 100 lbs..... \$4 25 \$4 95	
Ames', new list..... Discount, 12½%		Washita..... " "		Nos..... 3 2 1 large		Hair—New List..... 40&10%	
Neverbreak, hollow bck, blk..... Nets		cythe		Per doz..... \$9 50 11 25 12 75 15 50		Market.	
National..... " "		Black Diamond..... per gro. New Nets		Galvanized.		Bright, full bdles..... "	
Buckeye..... " "		Crescent..... " "		No..... 1 2 3		Bright, broken bdles..... "	
Mohawk..... " "		Green Mountain..... " "		Per doz..... 15 20 14 50 20 00		Coppered, full bdles..... "	
Bar Drain & Ditching		LaMoille..... " "		Twine.		Coppered, broken bdles..... "	
Iwan's Perfection..... \$30 00		Extra Quinebog..... " "		Market		Tinned, full bdles..... "	
Railroad, etc.		Red End..... " "		Quotation		Tinned, broken bdles..... "	
Black Diamond..... per doz. Net		STOPS, BENCH.		3-ply Cotton Wrapping.....		Picture—In coils..... 80% @ 80&10%	
Crescent..... " "		No. 10 Morrill pattern, per doz. \$10 00		4 " " " " " "		In 5-lb. spools..... per lb. 26c	
Keystone..... " "		No. 11 Stearns " " 8 75		4 " " " " " "		WRENCHES.	
Star..... " "		No. 15 Smith " " 6 50		4 " " " " " "		Coes Steel Handle, 6 inch..... 30%	
Hollow Back..... " "		STOPPERS, PLUE.		4 " " " " " "		" " " 8 " " 30%	
Ames', new list..... Discount, 12½%		Common..... per doz. \$1 10		4 " " " " " "		" " " 10 " " 30%	
Snow.		Gem, flat, No. 3..... 1 00		4 " " " " " "		" " " 12 " " 30%	
Galvanized, with wood han-		Gem, No. 1..... 1 10		3 " " " " " "		Coes Knife-Handle, 6 " " 30%	
dle, No. 56..... \$1 45		STOVE PIPE—See pipe.		4 " " " " " "		" " " 8 " " 30%	
No. 55..... 1 55		STOVE BOARDS—See Boards.		India Hemp, ½-lb. balls, No. 18..		" " " 10 " " 30%	
Alaska Steel.		STOVE POLISH—See Polish.		2-ply Jute, 1-lb. balls.....		" " " 12 " " 30%	
D-Handle..... per doz. \$3 50		STRAPS.		Seins.		Coes All Patterns..... 30%	
Long Handle..... 3 00		Shale..... per doz. 85c & 1 20		Soft..... per lb. Quotation		Bemis & Call's:	
SINKS.		STRETCHERS.		Med..... " " " " " "		Adjustable S, 15%; Adjustable S	
Cast Iron.		Carpet.		Hard..... " " " " " "		Pipe, 15%; Briggs' Pattern, 10%	
Painted, 16x24..... Net		Bullard's..... per doz. \$3 90		Staging, ½-lb. ball, size 21.....		Combination Bright..... 15%	
Enameled, White, 16x24.....		Excelsior..... " 5 25		" " " " " 24.....		Steel Handle Nut..... 20%	
Wrought Steel.		Malleable Iron..... " 70		" " " " " 27.....		Combination Black..... 15&5%	
Painted, 16x24..... " 3 00		Perfection..... " 6 30		Bagging, ½-lb ball.....		Merrick Pattern..... 10%	
SLEDGES—See Hammers.		King..... " 4 50		3-ply, "B" in hanks.....		Knife Handle Pattern.	
SNAPS, HARNESS.		Wire.		4 " " " " " "		No. 62, Screw Wrench. List, plus 5%	
Covered Spring..... Add 30%		O. S. Elwood, No. 1... per doz. Nets		4 " " " " " "		No. 60, Steel Handle.. "	
Judd's Pattern..... Add 33½% to list		O. S. Elwood, No. 2.. " "		3 " " " " " "		WRINGERS.	
SNATHS.		SWIVELS.		3 " " " " " "		No. 790, Guarantee..... per doz. \$61 00	
Double Ring, Bush..... per doz. \$9 75		Malleable Iron..... per lb. \$0 70		3 " " " " " "		No. 770, Bicycle..... " 57 00	
Patent Loop, Bush..... 10 00		Wrought Steel..... per gro. 4 50		4 " " " " " "		No. 110, Domestic..... " 50 50	
Patent Loop, Grass..... 8 75		TACKS.		4 " " " " " "		No. 110, Brighton..... " 46 50	
SNIPS, TINNERS'.		Bill Posters' 6-oz., 25 lb. boxes,		No. 2, Genuine Wentworth,		No. 740, Bicycle..... " 55 00	
Clover Leaf..... 40&10%		per lb. 15c		Noiseless Saw..... per doz. 20 00		No. 22, Domestic..... " 48 50	
National..... 40&10%		Upholsters' 6-oz., 25-lb. boxes,		Noiseless Saw..... per doz. 18 00		No. 22, Pioneer..... " 44 5c	
Star..... 50%		per lb. 15c		No. 500, All Steel Folding Saw		No. 770B, Bicycle..... " 92 00	
SOLDER—See Metals.		SPRINGS, DOOR.		per doz. 13 50		No. 781B Guarantee..... " 101 0'	
Perfect.		Light Medium Heavy		VISES.			
Nos..... 2 3 4 5 6 7		Per doz. \$1 55 2 10 3 20		No. 21, Hand..... \$5 00			
Per doz. 55c 60c 65c 75c 90c 1 00		Torrey's..... per doz. 1 65		Oval Slide,			
Reliance.		SPRINKLERS, LAWN.		Inches 2 2½ 3 3½ 4½			
Light Medium Heavy		Stearns' No. 1..... per doz. \$9 75		Each \$2.40 \$2.60 \$3.00 \$3.75 \$7.75			
Per doz. \$1 55 2 10 3 20				No. 1, Genuine Wentworth,			
Torrey's..... per doz. 1 65				Noiseless Saw..... per doz. 18 50			

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